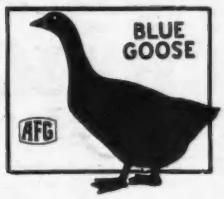
LIBRARY
RECEIVED
MAR 21 1925
U. S. Department of Agriculture.
Current author entries

The Citrus Industry

Issued Monthly

Representative of every Interest
Representing no special Interest

VOL. 6, NO. 3 TAMPA, FLA., MARCH, 1925 15 CTS. A COPY



"Known By The Best People"

Four advertising men sat in the dining room of a restaurant famed among New York epicures.

"I think I'll see if I can get a good grapefruit here", said one, winking at two of his companions. The fourth man was interested in grapefruit advertising. He "went along" on the order. No brand was specified.

The grapefruit was served. One man casually tilted his half and looked at the skin. He turned it completely around.

Not a word was spoken but the head waiter crossed the room.

"We have them ordinarily but somehow we couldn't get them for today", he said.

"Couldn't get what?" asked the advertising man.

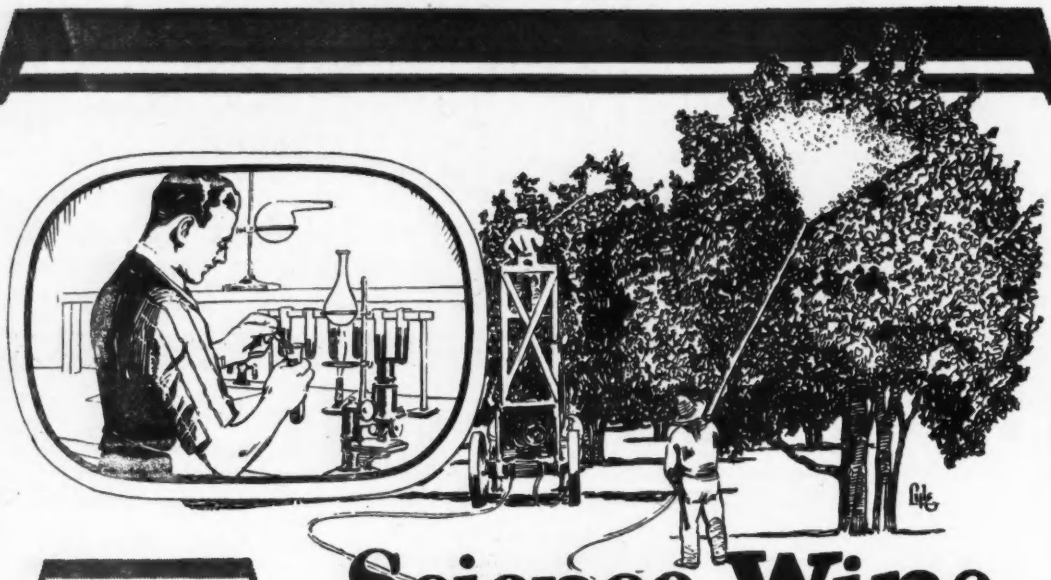
"The grapefruit with the BLUE GOOSE marked on it. Wasn't that what you were looking for."

When a brand gets a reputation like that among people who know quality there's no question about fruit shipped under it bringing full value.

American Fruit Growers Inc.

Orlando, Florida

AFG



Science Wins

–citrus pests completely conquered

Now is the time to arrange for a clean-up of your trees.

Treat them with VOLCK *this season and watch the results. If you do not own a good spraying outfit, we can recommend a reliable commercial sprayer who will do good work.*

California Spray Chemical Co.

807 Orlando Bank and Trust Building

Orlando, Florida

W. W. THOMAS, Mgr.

The Warfare against scale and other citrus pests has been a terrific one. Growers have succeeded by the utmost vigilance and by untiring effort in securing a certain degree of control, but where is the grower who will admit that he is entirely satisfied with the results of his efforts along this line?

Three applications of oil sprays for insect pests have been the rule in Florida groves. But even these repeated applications have not given the control desired, and many times the effort to kill the pest has resulted in serious injury to the trees. These are facts well known to every grower.

For years there has been an insistent demand for a spray material that would give effective control of these various pests, that would kill them in all stages of development, and that could be used at any time of year under any temperature or atmospheric conditions without danger of damage to fruit or foliage.

That demand has at last been met in VOLCK, a material invented by Mr. William H. Volck, head of our Research Department, and used in California for the past two seasons with amazing results. It has proven to be a distinct improvement over all materials and methods heretofore used in citrus pest control.

VOLCK kills all varieties of scale--armored, soft, and waxy--mealy bug, white fly, rust mite, red spider, and other similar pests. It kills them in all stages from the egg to the adult pest. It is safe to use at any time and under any condition. VOLCK is the only spray material effective against citrus scale that can be safely used at any desired strength. It does not injure either fruit or foliage. No burning, falling of leaves or other damage.

Because it may be used at sufficient strength to kill the pests in their various stages, the same or better results can be secured by one application of VOLCK than with three applications of the oils heretofore used.

Moreover, it mixes readily with Bordeaux, enabling the grower to clean up fungus and insect pests at the same time.

VOLCK

–an ORTHO Spray for Citrus Pests

ORTHO SPRAYS
HIGHEST AWARD
PANAMA PACIFIC EXPOSITION
1915
CALIFORNIA SPRAY CHEMICAL CO.

There is every assurance that the Citrus Industry of this state is on a firm substantial footing. The grower may expect fair prices for his product this winter and in the years to come.

The forward looking planter will therefore lay his plans to round out his acreage and right now reserve the choicest trees to insure his getting exactly what he wants.

"Glen Trees Grow"

Glen Saint Mary Nurseries Company

Offices:

Tampa, 8th Floor Citrus Exchange Bldg.	Winter Haven, First State Bank Bldg.	Orlando, Orlando Bank & Trust Co. Bldg.

Over forty-two years of Satisfied Customers has made this the largest Citrus Nursery in Florida.

L. B. SKINNER

President Florida State Horticultural Society

BAYARD F. FLOYD

Secretary Florida State Horticultural Society

Pourquoi vous devriez acheter des Pamplemousses Sealdsweet
Un Facteur de Santé
Sealdsweet signifie les Meilleurs de la Floride—
Seald Sweet
Le plus beau pamplemousse de la Flor
Les plus beaux Pamplemousses de la Floride
Seald Sweet
e meilleur pamplemousse de la Floride

TEACHING THE FRENCH TO EAT GRAPEFRUIT

George Clemenceau's noted fondness for Florida grapefruit is not the extent of the French demand for this fruit. The French people of Canada are now also enjoying the delicious food qualities and health benefits of grapefruit. And they are getting it with the Sealdsweet trade-mark, too!

Reproduced on this page are some of the Sealdsweet advertisements appearing in Canadian newspapers, written in French to reach that class of people.

The excerpt from the letter of the Montreal representative of the Florida Citrus Exchange, at the left, tells how quickly the Canadian French have responded to this appeal to add grapefruit to their diet.

Regularly, in all sections of the country, the Florida Citrus Exchange is opening new markets and creating new consumer demand for Sealdsweet grapefruit and oranges. It is always working to provide for the increasing production of Florida fruits and the continued prosperity of its growers.

From a Letter From Our Montreal Sales Representative

"--- The advertising appearing regularly in the Montreal Star and LaPresse has created quite an impression. The trade, I am glad to say, are now being called upon for Sealdsweet by the retail, hotel and restaurant people, as well as from small stores in the country—remote villages in the Province of Quebec where the population is practically 100 per cent French.—

"Hart & Tuckwell, of this city, the other day received a couple of letters from two different people who had never handled or even seen grapefruit before, accompanied by orders for a box of Sealdsweet with wrappers and copies of the advertisements that appeared in the LaPresse attached to the letters."

----excerpt from letter to the Florida Citrus Exchange from John F. Thomas, manager of the Premier Brokerage Co., Ltd., Montreal Canada, March 4, 1925.

FLORIDA CITRUS EXCHANGE

A Cooperative Organization of 7,000 Florida Orange and Grapefruit Growers.

Headquarters at Tampa

The Citrus Industry
THE ONLY PUBLICATION IN THE WORLD DEVOTED EXCLUSIVELY TO CITRUS FRUITS
Issued Monthly
Representative of every interest—
Representing no special interest

Vol. 6 TAMPA, FLA., MARCH, 1925 No. 3

Horticultural Society Meets in Eustis, April 7th to 10th

By Bayard F. Floyd, Secretary

The Thirty-Eighth Annual meeting of the Florida State Horticultural Society is to be held in Eustis, Florida. The meeting opens at 8:30 P. M. Tuesday April 7 and closes at noon Friday April 10th.

The opening address is to be given by Dr. L. H. Bailey who was formerly Dean of the College of Agriculture of Cornell University and is editor of the Encylopedia of Horticulture. Dr. Bailey is one of the national leaders in Agriculture and is internationally known.

The main program opens at 9:30 A. M. on April 8th. Among the subjects that are to be discussed are Maturity of Citrus Fruits from a Legal Point of View; New Cover Crops for Building up Citrus Soils; Methods of Grafting Grapefruit to Tangerines and other Varieties; Protection of Florida Horticulture by Federal and state quarantines; New Measures for the Control of Citrus Aphids; Fungus and Insect Parasites of the Citrus Aphid; Borax Treatment in the Washing of Citrus Fruits to Prevent Decay; The Color Standard as a Method for the Grading of Citrus Fruits; New Varieties of Tangerines; Economies in the Growing of Citrus Fruits; Bunch and Muscadine Grape Culture; Some of the Problems to be solved in the Growing of Grapes in Florida; Experiences in the Growing of California Grapes in Florida; The Growing of Figs in Florida; Blackberry Varieties and Their Culture; Bulb Culture in Florida; Sterility in Avocado Blossoms; The Blooming and Setting of Fruit in Avocados; New Ideas in Avocado Culture; Town and Country Beautification; Palms and their Propagation; The Use of Palms in Ornamental Plantings; Varietal Names and Their Control.

The program for this year is not to be as heavy as in previous years. An interval is to be given between each paper for free and open discussion. One session is to be given over entirely to the discussion of subjects suggested by those in attendance. A Committee is to be appointed by the President to receive these suggestions and provide for an orderly discussion of them.

Another feature of the program is the time to be allowed for entertainment. One afternoon is to be given over to motorcades thru the county visiting grape vineyards in the Montverde section, the Industrial School at Montverde and important groves and scenic points along the way; a boat trip on Lakes Eustis and Harris; Golf tournament at the Lake County Country Club.

The Women's Club of Eustis holds a Flower Show Annually. This year in courtesy to the Society, this Show is to be held during the time of meeting to the Society, and the Club is extending invitations to the members of the Society to send exhibits for display.

The place of meeting is to be the auditorium of the Presbyterian Church. The hotels of Eustis are the Fountain Inn and the Grand View Hotel. These with a number of smaller hotels, will provide ample and comfortable accommodations for all. Reservations should be made direct or thru Mr. H. H. Allen, Chamber of Commerce, Eustis Florida.

Membership in the Society is open to anyone interested directly or indirectly in any phase of Florida Horticulture. The annual dues are $2.00 per year, and should be sent by check to the Secretary at P. O. Box 719, Orlando, Florida.

The meetings are open to the general public and everybody is invited to attend and participate in the proceedings.

The Use of Unmarketable Fruit As Fertilizer for Citrus Trees

By W. W. Yothers and J. R. Winston, Orlando, Florida

A considerable quantity of unmarketable fruit is always present at citrus packing houses. As a usual thing this is hauled to some out of the way place in the woods away from citrus trees, but sometimes it is dumped near the main highways or at any rate in sight of passers-by. This latter practice gives rise to much unfavorable comment from people who do not understand the situation fully. They receive the impression such fruit is destroyed to increase the price of the fruit left on the trees. In several instances this decaying fruit was offensive and should have been declared a public nuisance.

There seems also to be an impression among many citrus growers that the use of any appreciable quantity of fruit around the trees would result in disaster to the trees and also to the quality of the fruit of succeeding crops. In some cases even fruit that dropped from the trees was hauled out of the grove two or three times a week, the grower thinking this would prevent serious diseases.

Under the circumstances it was thought advisable to present the result of experiments extending over several pears past.

On January 25, 1915, about 60 oranges were placed around each of 4 sour seedling trees, 1 inch in diameter and 3 feet in height. The fruit was left on top of the ground. In the fall of the same year these trees had grown about one foot, on the average, were thrifty and indicated that they had received an abundance of plant food. Another tree of the same size received twice the amount of fruit and it made an average growth of 18 inches—its top had doubled in size in one season.

Another experiment was made on a sweet seedling about 4 inches in diameter and 8 feet high. It was the only trunk of the original tree left that had not been killed by foot rot; it was scraggly in appearance. From January 25, 1915 to May 6, 1915 about 10 boxes of fruit were placed around this tree. The ground for a radius of 10 feet or more was covered with the fruit for months. The effect of this fruit was beneficial; new growth started at the proper time and considerable bloom appeared. In late fall of 1915 there were about 30 fruits on the tree, smooth in appearance and of good marketable size and the tree was vigorous and thrifty in appearance.

In a grove at Plymouth, the soil in one end of which was what is commonly known as dead, the ordinary orchard grasses such as crab grass, sand spurs, Natal grass did not grow at all and cow peas hardly grew six inches tall. Several loads of unmarketable fruit were dumped in the middles of this grove and a noticeable improvement resulted, but there was not a sufficient quantity of fruit to entirely remedy the situation. In the winter of 1923-1924, about 10 boxes were placed in each of four middles, 15 by 30 feet each, this produced the desired effect. The grass grew luxuriantly and the foliage of the trees became a healthy green and the growth was much greater than on trees just a few feet distant. The fruit was abundant, smooth, and of most excellent quality.

In another grove having good soil a more drastic experiment was carried on. In 1919 about 3 field boxes of fruit were placed around each of 8 orange and grapefruit trees, then three years old. In 1920 about 10 boxes were placed around each of the same trees; in 1921 about 20 boxes each, and in 1922 not less than 15 boxes were used for each tree, making a total of 48 field boxes per tree during a period of four years. Since the trees were only 10 feet apart, there would be nearly 2 boxes per square foot of surface. In addition to the fruit, regular applications of commercial fertilizer were made. The trees grew much faster than trees that did not receive waste fruit and were by far the best trees in the grove.

In all of these experiments no indications have ever been observed to even suggest that decaying fruit around citrus trees increased or had any relation to such diseases as scab, melanose, stem end rot, blue mold, foot rot, or any form of dieback. Neither have any indications been observed that the use of waste fruit around trees had any tendency to coarsen the fruit, make it puffy or lower the grade in any way. The results of these experiments are borne out by general field observations.

We have used enormous quantities of waste citrus fruit on Avocados. While this was not measured, there must have been not less than 20 boxes or 1600 pounds per tree for two successive years. Some of this was put in a trench 18 by 18 inches, and then covered with soil, while the remainder was left on top of the ground. This fruit has been of great value to these trees. They are perhaps the largest trees for their age in the state. No injurious effects have been observed to the trees; in fact, one of the trees had some disorder with symtoms similar to those of rosette, and the waste fruit remedier this trouble in a few months.

We fully realize that the quantity of unmarketable fruit is extremely limited and cannot have any appreciable effect in the production of crops of fruit; nevertheless, we believe this class of fruit may be utilized instead of being wasted as at present.

CITRUS APHIS BULLETIN OUT

"Controlling the Citrus Aphis" is the title of a new bulletin just issued by the Florida Experiment Station. This bulletin should be of help to grove owners of the state who are troubled with this new citrus pest. It contains all information available at present on the control of this aphis, which wrought destruction in many groves a year ago and seems liable to do more damage this year.

The bulletin, which is number 174 is by J. R. Watson and A. H. Brewer, both of whom have done considerable laboratory and field work in connection with this new pest, and embodies the result of their investigations in the field and the laboratory, as well as their observations from other reliable sources.

Illustrations used in this bulletin should be helpful in determining when the aphis is present in a grove, as well as in identifying the aphis under the magnifying glass or microscope.

Since it is urgent that an early start be made in controlling this pest, grove owners desiring a copy of the new bulletin should write at once to The Director, Experiment Station, Gainesville, Fla., and ask for Bulletin 174. It is free.

Citrus Culture In Egypt

By May E. Lambert, Orlando, Florida

Egypt has both suitable soil and climate for the cultivation of citrus fruits. Oranges grow well in any part of the country, and they can be grown on land which is too poor and sandy for the cultivation of cotton or maize. Very little attention, however has been given to the cultivation of fruits by agriculturists in Egypt; the care of plantations is left in the hands of workmen who have no knowledge of the treatment of trees, nor of the means to be taken to prevent disease.

The commercial nurseries equiped with highly trained workmen and modern arrangements for the packing and despatch of plants are almost unknown in Egypt. The methods used in digging and transplanting plants are for the most part crude and defective.

Citrus trees in Egypt are propagated by means of cuttings, layers, seeds and grafting. Cuttings are usually employed for the multiplication of the citron (Ar. Trong) and for the propagation of the Egyptian Sweet lemon. The method of propagation by means of layers is clumsy, slow and otherwise unsatisfactory. Seed is always employed as a means of propagating the Bitter orange and the Common lime. Other kinds of citrus trees are also raised from seed, when they are to be used as stocks. Some cultivators prefer seedling trees of oranges because of the fact that the seedling trees often bear larger fruit than those which are grafted, but they are open to many objections and have, for that reason, given place to those which are grafted.

The stocks which are most commonly used in the propagation of citrus trees are the Bitter orange, the sweet orange, the lemon, the lime, the pomelo, the Sweet lemon of Egypt, the citron and the Trifoliate orange.

The Bitter orange is easily raised from seed and it is not liable to the attacks of collar-rot. In spite of several objections to its use, it is, as far as is known at present, the safest stock to use for the propagation of most of the different kinds of citrus trees cultivated in Egypt.

Trees which are grafted on stocks of Sweet orange grow more strongly than those on Bitter orange, but the Sweet orange stock is subject to the attacks of "mal-di-goma" (foot-rot), and its use therefore is not recommended.

Trees which are grafted upon the Rough lemon of Florida stock grow quickly and attain a large size, but this stock has not been tried on a sufficiently large scale in Egypt to know whether it is a safe stock to use in that country.

It has been found that the work of budding the young plants of the common lime is somewhat more difficult than it is in the case of the Bitter orange, but it is being used experimentally as a stock in the Government gardens.

The Sweet lemon of Egypt is preferred to the Bitter orange on light soils. The trees are said to be more precocious but of shorter life than those of the Bitter orange.

The shaddock is said to be unrivalled as a stock on dry land. Unfortunately, the variety which is usually cultivated in Egypt is extremely subject to the attacks of the scale insect, Aspidiotus aurantii.

The Trifoliate orange has been employed as a stock for all kinds of citrus trees in China and Japan, and is now used in many other countries also; but trials have demonstrated that it is entirely unsuited to the conditions of Egypt.

The stock which is most extensively used in Egypt for the propagation of orange and mandarine trees is a variety of citron known as "Trong-Baladi." Trees which are budded upon the citron grow quickly, yield more freely when young, and produce somewhat larger fruit than trees which are grown on the Bitter orange. The trees, however, are short-lived and are very subject to the attacks of gummosis and other cryptogamic diseases.

The value of good land in Egypt is high, and the establishment of young citrus plantations entails irrigation at all seasons. Continuous irrigation neccessiatates frequent hoeing and weeding, and these facts make the period which elapses before trees arrive at maturity a trying one to cultivators. The desire of obtaining the maximum revenue while the plantation is still young has led to the adoption of various systems. Some planters make the mistake of planting their trees too closely and thus in time lose instead of gaining by their haste. Some interplant their citrus groves with other kinds of fruit trees such as guava and peach, but it has been found that this practice is not at all beneficial. Apricots and apples are also used as temporary trees, but they are both unsuitable for the purpose. The only tree which seems to meet the conditions necessary for a good temporary tree is the pomegranate. In order to utilize the space between the citrus trees, vegetables of various kinds have been planted, but this practice invariably leads to the injury of the trees. It is recommended that in poor land which is still somewhat salty, no attempt should be made to cultivate any crops so that the surface-layer of soil may be kept loose and friable by frequent ploughing. On very sandy land the most suitable and profitable crop to grow between the trees is the earth-nut (Arachis hypogea, Ar. Ful Sudani.)

The most common sweet orange in Egypt today is the Portugal Navel. Flat orange, Sugar orange, Round Jaffa orange, Blood orange, Myrtle-leaved orange are among the varieties grown in Egypt. The Kumquat, Tangerine, and Bargamot orange are still rare in that country, but about eight different varieties are grown. The Ponderosa lemon, Rough lemon of Florida, Rough lemon of Egypt, Italian round lemon and several other varieties are found in Egypt, and six or seven varieties of citron are raised. The Duncan variety of grapefruit has been found to be particularly good in Egypt; it is increasing in popularity and there is reason to think that the establishment of plantations of this tree will soon become a commercial proposition.

To illustrate the difference in Egyptian methods to those used in our own country, the following statements are quite interesting:

"No matter where the fruit is to be sold, it should always be cut from the tree with a piece of the twig attached. The custom of pulling the oranges away from their stalk is injurious to the trees and detracts from the keeping-qualities of the fruit. Needless to say, the careful workman will take every precaution to prevent the bruising of fruit when it is gathered. The practice of shaking the branches and allowing the fruit to fall to the ground should never be permitted.

"Before sending citrus fruits to market, they should always be graded into two or three sizes. The most usual course is to send them to market just as they come off the trees. The merchant who buys them asses-

Continued on page 32

Preliminary Results With the Borax Treatment of Citrus Fruits for the Prevention of Blue Mold Rot

By Harry R. Fulton, Pathologist, and John J. Bowman, Pathologist, Office of Fruit Disease Investigations, Bureau of Plant Industry, United States Department of Agriculture

Recent studies by the senior author on the effect of ultraviolet light in disinfecting the surface of citrus fruits, details of which will be published in the near future, have indicated that more than 99 per cent of blue-mold spores may be killed very quickly by light of short wave lengths, and at comparatively low cost, but that blue-mold rot is not proportionately checked. The two weak points in the ultraviolet threatment seem to be (1) the difficulty in killing the last small percentage of Penicillium spores, and (2) the lack of any later protection against stray spores that remain unkilled or may reach the fruit. Being thus strongly impressed with the desirability of using some agent that would have a continuing effect, the writers have undertaken the testing of a large number of mild chemical reagents with the view of finding inhibiting rather than killing substances. The stronger disinfectants would be objectionable, because their poisonous character would not permit residues to be left and because many of them would actually injure the surface of the fruit if not immediately washed off.

The general procedure has been to select chemicals for preliminary tests largely on the basis of cheapness and availability. Spores of Penicillium were treated with relatively strong solutions of these chemicals for periods of 1 to 24 hours, and were then plated to determine the killing effect. Parallel tests were made for inhibition. Any reagent that seemed at all promising was then applied to a few citrus fruits to determine whether it would injure the skin. If it seemed safe to use, an actual test was made to determine its protective action on severely wounded and inoculated fruit held under conditions of temperature and moisture favorable for blue-mold development. Usually some one of the stronger fungicides was included in each test as a basis for comparison.

Holding tests have been made thus far with fruit treated with solutions of the following chemicals: Sodium sulphate, sodium bisulphate, sodium borate, sodium fluoride, sodium perborate, sodium chloride, potassium permanganate, potassium borate, copper borate, bichloride of mercury, boric acid, salicylic acid, benzoic acid. Among these sodium borate, or borax, has seemed to give the best protection against blue-mold rot.

The results of one holding test, made March 14, 1924, which included borax along with certain other materials will serve as an illustration and is shown in Figure 1. California navel oranges purchased in the Washington, D. C., market were used. The fruit was soaked for 10 minutes in inoculum carrying about 500,000 per cc. of mixed Penicillium digitatum and P. italicum spores. The fruits were dried, then atomized with the chemical solution (the control with water); dried again; punctured 100 times with pins to the depth of about half way through the peel. They were wrapped in waxed paper, packed in a tight barrel with wet newspaper between each two layers of fruit; and were kept at room temperature of about 72 degrees F. Examination for rot was made every three days. The results show some benefit from all of the chemicals; 1:5000 bichloride of mercury, 5 per cent boric acid, and 5 per cent sodium bisulphite had approximately the same effect; and 5 per cent sodium borate (borax) was distinctly more effective, particularly during the first 24 days of the test. In Figure 2 are shown the average results of 15 tests on oranges of 5 per cent borax treatment, as compared with no treatment and 5 tests on lemons. These tests were made at various times. In all cases the fruit was punctured at 100 points, was inoculated with a suspension of blue-mold spores, and was packed between wet paper. The strength of the inoculum was varied in some of the tests, as was the sequence of puncturing, inoculating. and treating with borax. The method of applying the 5 per cent borax solution was either by dipping the fruit momentarily in the solution, or by soaking for 1 minute or for 10 minutes, or by atomizing over the fruit, or by applying with a brush; all of these methods proved effective. The averages are based on 491 treated and an equal number of untreated fruit for the oranges, and on 270 fruits for the lemons. They show the effectiveness of the treatment under conditions of infection far more severe than would occur in even the worst commercial practice. The treat ment with 5 per cent borax solution resulted under these exceedingly severe conditions in a distinct reduction in blue-mold rot, but did not give what would be considered satisfactory control. The treatment seemed to be more effective on oranges than on lemons.

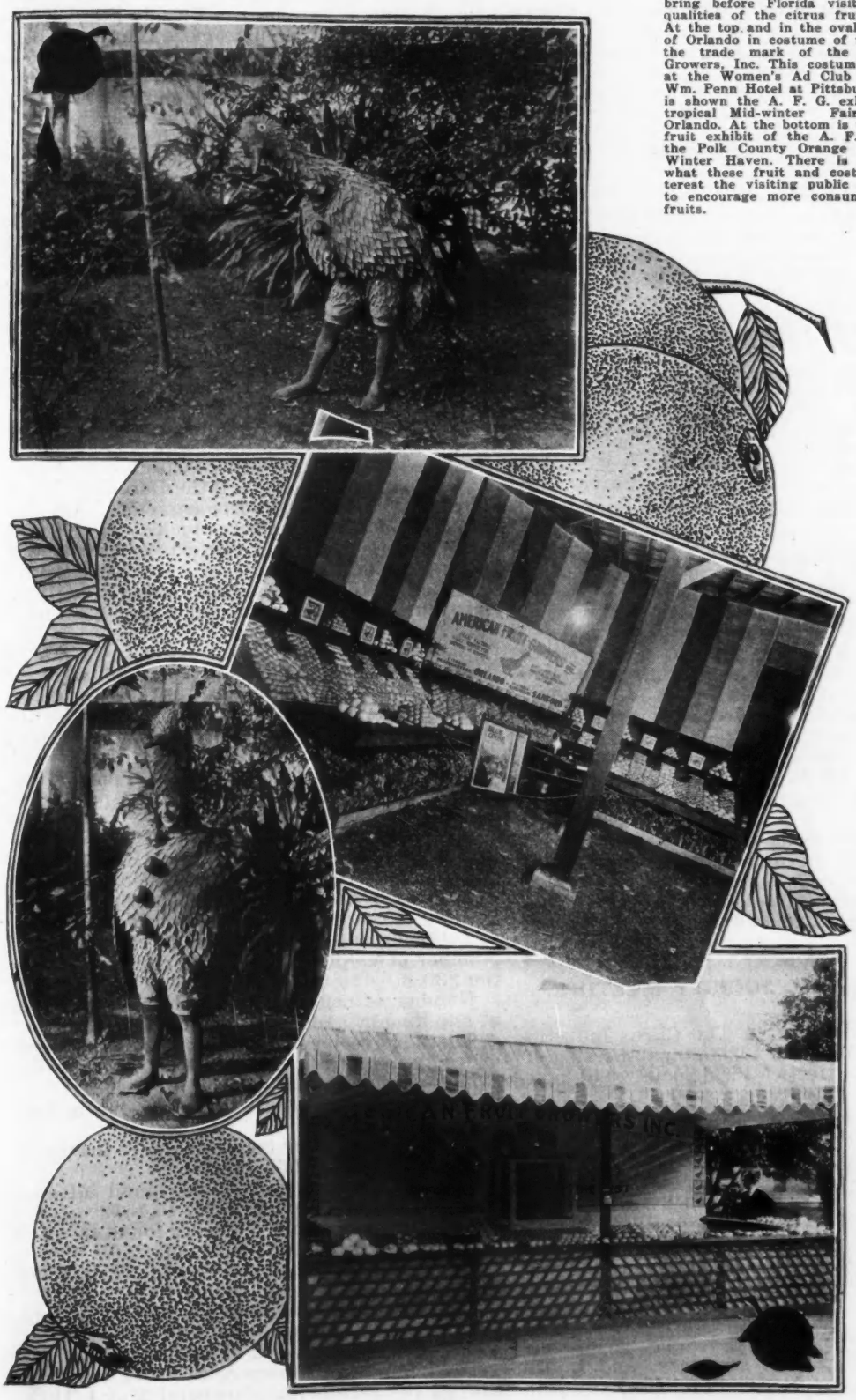
In certain other tests the fruit was not only punctured, but was severely bruised by dropping several times from a table to the floor, and several slices resembling very severe clipper cuts from the outside of the peel. In such cases soaking one minute in 5 per cent borax solution had a very satisfactory protective effect, but the mere brushing on of the solution was less effective.

A preliminary test to determine the value of the borax treatment under commercial conditions was made in Florida with oranges. In one series of tests samples of 100 fruit were taken from the packing houses; each sample was divided into two lots, one lot was dipped momentarily through 5 per cent borax solution and the control lot through water; the fruit was allowed to dry, and was held for several weeks at approximately 74 degrees F. in rather moist atmosphere. These conditions of temperature and moisture are more favorable for rot than usual commercial conditions, but were considered desirable in order to induce enough rot for a difinite showing. In Figure 3 the averages are given for 11 sample lots of 50 oranges each, representative of Florida oranges in late April, including Valencias in their prime and seedling oranges that were dead ripe. There is a distinct reduction in all three rots, Phomopsis and Diplodia stem-end rots showing decided reduction as well as blue-mold rot. This reduction in stem-end rots was an entirely unexpected outcome of the experiment. One possibility is that the borax solution may penetrate and dis-

Continued on page 30

POPULARIZING FLORIDA'S ORANGES AND GRAPEFRUIT

Here are some of the excellent displays made during the winter tourist season to bring before Florida visitors the superior qualities of the citrus fruits of this state. At the top, and in the oval is a society girl of Orlando in costume of the "Blue Goose" the trade mark of the American Fruit Growers, Inc. This costume won first prize at the Women's Ad Club Ball held in the Wm. Penn Hotel at Pittsburg. In the center is shown the A. F. G. exhibit at the Subtropical Mid-winter Fair held yearly in Orlando. At the bottom is the prize winning fruit exhibit of the A. F. G. displayed at the Polk County Orange Festival, held at Winter Haven. There is no question but what these fruit and costume displays interest the visiting public and lend a hand to encourage more consumption of Florida fruits.



The Citrus Industry

Exclusive publication of the Citrus Growers and Shippers

Address all communications to the Main Office
415 Stovall-Nelson Building
Tampa, Florida.

Telephone ---------- 4819

S. L. FRISBIE, Editor and Manager

H. L. WALL ----------Advertising Manager
A. G. MANN ----------Production Manager

Published Monthly by
Associated Publications Corporation
Tampa, Florida.

Subscripion, $1.00 per year in advance

Entered as second-class matter February 16, 1920, at the postoffice at Tampa, Florida, under the act of March 3, 1879.

Branch office and production plant, Bartow, Florida.

GROVE CALENDAR FOR MARCH

Timely Suggestions for Grove Work During the Present Month.

Keep the Acme harrow going every week or ten days in the citrus grove: frequent cultivation checks loss of moisture required by young fruit.

Trim nursery stock, preparatory to budding; start budding if stock is ready.

Spray to control melanose and scab of citrus with 3-3-50 bordeaux-oil emulsion (1 per cent oil); apply spray ten days after petals fall.

Pick up and destroy wormy peach drops and lessen later damage from curiulio (wormy peaches). Spray or dust pecans with lead arsenate, as the leaves come out, for case borers and bud worms.

HORTICULTURAL SOCIETY MEETING.

Before another issue of The Citrus Industry reaches it's readers, the 1925 annual meeting of the Florida State Horticultural Society will have convened at Eustis.

The meeting of the Society this year is to be held in Eustis, among the lakes, hills and orange groves of Lake county, and the tentative program published elsewhere in this issue gives assurance that the meeting will be fully up to the standard set by previous meetings of the Society. April 7 to 10 is the date of the meeting this year, and the officers and committees have left nothing undone to insure the success of the meeting.

Officered by such horticulturists as L. B. Skinner, president; Wm. J. Krome, vice-president; Bayard F. Floyd, secretary, and L. D. Niles, treasurer, the Florida State Horticultural Society embraces in its membership all of the leading horticulturists of the state. In its long period of existence, this year being the thirty-eighth annual session, the Florida State Horticultural Society has done more than any other one agency in advancing the cause of horticulture in the state. Its activities along the line of citrus culture and disease control have been particularly active and effective, and the citrus growers of Florida owe much to the Society.

Membership in the Florida State Horticultural Society is open to any man or woman in Florida who is interested in the welfare and development of horticultural industries, and the membership fee is merely nominal, being but $2.00 per year. A letter addressed to the Secretary, Bayard F. Floyd, at Orlando, with enclsoure of a check for $2.00, will bring a receipt for your 1925 membership dues. Today would be a good time to send it.

NO CITRUS CANKER IN FLORIDA

Not a single citrus tree in Florida was found infected with citrus canker during 1924, according to a statement recently released by the State Plant Board of Florida and the Bureau of Plant Industry, United States Department of Agriculture. This includes nursery stock.

Over forty thousand grove trees and nearly twenty million nursery trees were inspected by members of the board's staff during January of this year, and again not a single tree was found infected.

Since the canker fight was begun in Florida in 1914, the disease has appeared in 22 counties, in 510 different properties, on 15,151 grove trees. Of the entire 510 different properties upon which canker has appeared, all but eight have been sufficiently freed of the disease that the Plant Board is able to class them as "no longer danger centers." These eight properties are still classed as infected.

The board has destroyed 136,875 grove trees and 2,720,525 nursery trees since May 1, 1914, in order to wipe out canker. Below are the board's and department's official figures concerning citrus canker eradication work:

Total number of employees in the state, 89.
Number of employees in citrus canker eradication, 30.

Number of counties in the state which have at one time or another shown canker, 22

There have been no counties, properties, grove trees or nursery trees found showing canker during January, 1925.

Number of grove trees inspected during January, 41,599.

Number of nursery trees that were inspected during January, 17,955,708.

Total number of grove trees found infected May 1, 1914, to Jan. 31, 1925, 15,151.

Total number of nursery trees found infected May 1, 1914, to Jan. 31, 1925, 342,260.

Total number of properties found infected May 1, 1914, to Jan. 31, 1925, 510.

Properties declared no longer danger centers, 502.

Properties still classed as infected, 8.

Total number of "exposed" grove trees destroyed (by permission of owners) May 1, 1914,

to Jan. 31, 1925, 236,873.

Total number of "exposed" nursery trees destroyed (by permission of owners) May 1, 1914, to Jan. 31, 1925, 2,720,525.

HIGH PRICES ENCOURAGE STEALING

The high prices being received for citrus fruits has its drawbacks. While the growers are glad to know that they are getting more for their oranges and grapefruit, they are depressed by the fact that because of the enhanced value of the product of their groves, they are threatened with being despoiled by fruit thieves.

"Because of the almost unprecedented prices at which oranges are being sold, thieves are becoming active and grove men everywhere in the Valencia belt of Florida are sitting up nights to watch their crops," said C. C. Commander, manager of the Polk County Citrus Sub-Exchange. "A conscienceless man familiar with a grove, who, probably had been employed in the grove at $2.50 a day, might find it hard to resist the temptation to make $25.00 a day or a night by pilfering a few boxes of high-priced Valencias. It is well for the growers to keep a sharp lookout.

"With oranges bringing $4.00 and upwards, on the tree, the temptation is great. Several cases have been reported within the past few days where the growers lost from 200 to 400 boxes of fruit in a single night. Stolen fruit usually comes from groves well off the main-traveled roads, and the thieves do not take the time to clip it from the trees. They pull or snap it off and all packing house managers are being urged to be on the lookout for pulled or snapped fruit in order that its origin may be looked into.

"It will be recalled that in the spring of 1922, when prices were high as they are now, several Polk county groves were stripped clean by thieves. We don't want a repetition this year."

CLEAN FRUIT

The great problem of the Florida citrus grower is the production of clean, bright fruit. The production of any desired quantity of citrus fruit is comparatively easy. The production of sweet and juicy citrus fruit is a problem not hard of solution by the Florida grower, for Florida fruit is proverbially sweet and juicy. But the production of clean, bright fruit is a problem with which Florida citrus growers must wrestle in season and out of season. There are bugs and tree diseases always to be fought if the desired appearance is to be achieved—and the grower must be ever on the alert if the bugs and diseases do not get the better of him.

Recognizing the importance of this problem to the citrus growers, The Citrus Industry will next month devote a large part of its space to a discussion of this problem by many of the leading horticulturists of the state. Men prominent in citrus culture, chemists engaged in commercial activities, and men engaged in actual field work in groves of the state, have promised to give their views and the results of their investigations and experience for the benefit of readers of The Citrus Industry.

From the standpoint of grower interest, we hope and expect to make the April number of The Citrus Industry the best we have ever issued. If you have had some special experience along this line, won't you give our readers the benefit of your experience and observation?

Drops and culls now seem to have a place in the program of the citrus grower. Instead of being dumped along the roadside to become an eyesore and a menace, they should be left to rot under the trees and perform their rightful function as soil builders and humus producers.

Every grower of citrus fruits should encourage the efforts of marketing agencies to develop foreign markets. Once the Europeans get to eating Florida grapefruit and oranges, the question of consumer demand will be settled—and settled for all time.

Dumping the drops and culls on the local market is a poor advertisement of Florida fruit. The Florida visitor is entitled to as good and as attractive fruit in Florida as he buys in his local market "up North."

Don't house your grove implements under trees or under the open sky during the winter months and expect them to be in shape for use in the spring.

Spot picking in Florida groves is being more generally practiced this season than ever before. The effect is being seen in the more uniform sizes and the better price received on the markets.

Two things citrus growers badly need—increased foreign markets for citrus fruits, and increased consumption of citrus by-products.

If you neglect the fertilizer application, your trees will neglect production. A poorly fed tree is as unprofitable as a poorly fed mule.

Fertilize, prune and spray. Nothing else which you may do can take the place of these three essentials to good fruit production.

It matters not to the grower who eats his fruit, whether it be Frenchman, Briton or German, so long as the fruit is eaten and paid for.

Bright fruit means greater profit to the grower. Spraying will produce brighter fruit. Moral—spray.

Not greater production, but better quality and appearance, is the primary problem of the Florida citrus grower.

There are many good fertilizers, but no fertilizer will do your trees any good so long as it remains in the bag or the table lot.

Prune sparingly but wisely. An unpruned tree soon becomes a laggard and unprofitable tree.

Will YOU produce quality fruit next year?

The Cavendish Banana In Florida

By T. J. Harris

EDITOR'S NOTE: Mr. Harris is a Fellow of the Royal Society of Arts and Industries, and has a background of seventeen years practical experience with the British Government's agricultural and horticultural stations in the West Indies. Mr. Harris is regarded as the foremost authority on Banana Culture in the State of Florida, and has recently accepted the position as Horticulturist at the Taylor-Alexander commercial banana plantations, at Winter Haven.

Subtropical Florida has now come into possession of a real subtropical industry in the extensive plantings of the Cavendish banana centered at the Taylor-Alexander development at the head of the Peace Valley near Winter Haven.

Hitherto, with the exception of the citrus, all Florida crops have been rather precarious and very exacting in their cultural needs; so much so that many northern folks have brought their all to this state and gone into farming and, not understanding local conditions, have often lost everything. This was inevitable as the crops grown were similar to those grown in temperate climates, soft and easily damaged by floods, cold, and droughts, plants occupying a few inches of the soil and a foot or so of the air, subject to insect attack and fungus diseases, and often ruined by heavy pounding rain. During last Fall this state was visited by unprecedented floods and the only crops that came safely through the ordeal were the Cavendish banana and citrus fruits; and now the banana has shown its ability to withstand a temperature of 28 degrees F. without material damage.

Musa Cavendishii is truly a remarkable plant in that it lives underground but sends its leaves and their stalks up into the air and light some six to eight feet high and its mop-like arrangement of fibrous roots three to five feet in the ground, Thirty or so leaves have to unfold before the bunch of bananas appears but only seven or eight are in occupation at any one time; so that if one set of leaf blades is damaged in any way there are always plenty more to carry on.

It is distinctly a gregarious plant and the denser the plantation eventually grows the safer the individual plants are and the better they grow; inversely a few scattered plants, or a single row, are at a complete disadvantage in every way.

The Taylor-Alexander plantations afford a good example of mass planting and the extensive areas are expected to permit of daily harvestings of trainload lots.

Here the plantation owner need not be familiar with the eccentricities of the Florida climate, for the Cavendish evolved in a similar one and is peculiarly adapted to Florida conditions; he need not understand the cultivation of bananas though if he is so inclined he may study banana culture under expert guidance while his plants are growing. There is no plantation more beautiful than that of Cavendish bananas, while immunity to insect pests and fungus diseases and consequent total absence of spraying render the occupation an extremely pleasant one.

The owner of a plantation in the Taylor-Alexander Peace Valley development finds himself in a position that compares very favorably with those who are endeavoring to establish plantations in various parts of the state from a small beginning of a few plants and with very little knowledge of the cultural requirements of a banana plantation; he has a whole acre planted for him from which, during the next two years, he is able to secure enough plants to set out the remainder and still have some plants left to sell.

To those who are interested in the origin of the various commodities which we use in our daily lives and which are obtained from members of the vegetables kingdom, the banana is interesting in that it belongs to a family of plants which yield starches and spices; this family is known to botanists as Seitamineae. This is distributed over the Asiatic and African floras extending from China to Central and West Africa; the most northern one is the Cavendish banana (Musa Cavendishii) whose native habitat is China and the most tropical one is the Martinique or Central American banana whose home is in equatorial Africa.

We have in our Florida flora a pigmy member of the Banana family (Canna edulis), whose rhizome is used as food by the Seminole Indians; other pigmy members of the family are: Elletaria cardamomum, the cardamon species is contained in the seeds; "Arrowroot" is the starch grated and washed out of the rhizomes of Maranta arundinaces; ginger is the rhizome of Zinegiber officinalis, and Turmerir is the rhizome of Curcuma longa which, when ground, becomes a spicy ingredient of Curry powder. Manilla Hemp is obtained from Musa tentilis of the Phillipine islands and we in Florida are familiar with yet two other members of this interesting family of plants—the Travellers' Palm (Ravenola madascariensis) and the Wild Ginger (Alpinia nutars).

Seitamineae is a very ancient family of plants and existed in greater abundance in the days when huge herbivorous animals roamed the earth; now that immense dry areas have come into existence, presumably through deforestation, the bananas like the Ferns and Mosses, are found to thrive well only in localities where the atmosphere is comparatively humid; hence the extraordinary development of the Cavendish plant in the humid atmosphere of Florida.

PLANT QUARANTINE INSPECTOR

Receipt of applications for plant quarantine inspector will close April 25. The date for the assembling of competitors will be stated on the admission cards to applicants after the close of receipt of applications.

The examination is to fill vacancies under the Federal Horticultural Board, Department of Agriculture, for duty in Washington, D. C., or in the field, at the entrance salary of $1,860 a year. Advancement in pay may be made without change in assignment up to $2,400 a year. Promotions to higher grades may be made in accordance with the civil-service rules.

The duties of the position are to assist in the enforcement of the various quarantine and relugatory orders issued under the plant quarantine act of August 20, 1912.

Competitors will be rated on entomology or plant pathology, practical questions in plant-inspection work, and education and experience.

Full information and application blanks may be obtained from the United States Civil Service Commission, Washington, D. C., or the secretary of the board of U. S. civil-service examiners at the post office or customhouse in any city.

Electricity on the Farm

More than a hundred electrically operated devices for farm and household work were shown at the Electric Farm conducted near Harrisburg, Pa., January 19-23, in conjunction with the State Farm Products Show in that city. Probably never before was so extensive a demonstration of the range of electricity's ability to aid in the work of the farmer and of the farmer's wife staged on any farm.

It was a demonstration, not a sale. Prices were not quoted on any of the devices. There was not the slightest effort to sell anything. Inquirers were referred to the light and power companies or the dealers in their home town, or to manufacturers. The sole purpose was to show the farmer—and the farmer's wife—what electricity could do in saving labor and time and promoting efficiency and convenience. Morever, the farm was a real "dirt farm", typical of that section of the State. The barns and other buildings were representative of any number to be found in that region and elsewhere. The house was a brick structure, built many years ago.

No part of the farm was overlooked in planning this demonstration. The house, the barn, the dairy, the chicken house, the yard and even the hog house were included within the scope of the electrification.

The extent of the exhibit may be judged from the following list of devices shown, all arranged for operation by electricty.

Barn, shed and yard—Wood splitter; threshing machine and cleaner; concrete mixer on skids; saw frame with 30-inch saw; wheeled truck to carry electric motor; electric motor on wheeled truck; two 19-horsepower motors; 10-horsepower motor on wheeled truck; floor scrubber; grooming machine; clipping machine; feed grinder; potato grader; exhaust fan; power hoist for motor drive; pump jack; electric call and alarm siren; ensilage cutter and blower; hay baling press; fodder shredder; combination mill and bagger and carrier; thermocouple detector indicator (to detect the heating of insufficiently cured forage crops); corn sheller; fans.

DAIRY—milking machine; churn; separator; bottle washing machine; milk cooler.

CHICKEN HOUSE—Time switch; brooder; incubator; small grain mill; fountain.

WORKSHOP— Electric heater; bench grinder; soldering irons; forge with electrically-driven blower; drill press; portable electric drill; grindstone.

GARAGE—Heater for automobiles; trailer lamp; battery charging device.

MISCELLANEOUS— Centrifugal fire pump; flood lights; vertical sump pumps.

In The House

KITCHEN—Refrigerator; coffee cleaner; utility motor with grinder, cake mixer and polishing attachments; exhaust fan; meat grinder.

DINING ROOM—Table stove; percolator; samovar; toaster; waffle iron; electric crumb brush; table socket; electric log for fireplace; fan.

LIVING ROOM—Radio outfit with loud speaker, batteries and battery charger; sewing machine; electric piano; electric fireplace; cigar lighter; fan; flashlight.

BEDROOM—Boudior lamp with dimming device; all night lamp; heater; nursing bottle heater; heating pad; fan.

BATHROOM— Electric heater; curling iron; hair dryer; hair drying comb; therapeutic lamp; vibrator; violet ray outfit; immersion heater; electric safety razor.

LAUNDRY— Washing machine and wringer; mangle iron (ironing machine); hydro-pneumatic pump; two flatirons; hot water heating system; fan.

It was explained to visitors, of whom there were six thousand during the course of the demonstration, that there was no thought that any farmer would "find it practical or feasible to equip a farm as completely as that of this exhibition. The idea is simply to bring under the roofs of one farmstead many of the outstanding electrical achievements of particular significance to agriculture."

A number of devices exhibited contained built-in motors—that is, the motors were a part of the machine; for others, electric drive was provided by portable motors. Thus the visitors were able to see the machines in operation. In fact, some of the devices were in actual use in the work of the farm. Demonstrators were on hand to explain the aparatus, including the household equipment as well as the farm machinery. Literature in the form of descriptive booklets and pamphlets was provided for distribution.

The demonstration was made possible by the co-operation of a number of different organizations. The proposal to hold it was approved at a meeting attended by representatives of the Giant Power Survey, Pennsylvania Department of Agriculture, Pennsylvania State College, Pennsylvania State Grange and the Pennsylvania Electric Association, including manufacturers of electrical equipment. Following this, an Electric Farm Committee, consisting of a representative of each of the above, was named to carry out the plans. A budget was drawn up and a manager selected.

Mr. J. Q. R. Rutherford generously gave the use of his farm and home for the purpose of the demonstration, and the electrical equipment was by various manufacturers and dealers. The house had been receiving electric lighting service, but it was rewired for the demonstration and distribution lines were run to the barn, to the dairy, the chicken house, the laundry (which was in a separate building) the hog house and to certain points in the yard. The wiring was done by the local light and power company and the current necessary for the demonstration was likewise supplied free of charge by this company. The expense of the undertaking was borne by the various organizations which sponsored the project.

This Electric Farm was not only an event of unusual interest, but a remarkable and instructive demonstration of the range of farm and household machinery and devices which can be operated by electricity at saving of labor and time and at a great gain in convenience.

ORANGES SCORE SUDDEN RISE

After a year and a half of prices that barely showed a profit over operating expenses, Florida oranges began a steady climb the past month that has now progressed to a point where receipts are said to be better than at any time during the preceding five years. A further advance is predicted before the 1924-25 season closes this summer.

Grapefruit, although not making as spectacular an advance as oranges, has steadied and is now showing steady gain. A marked advance in sale price of grapefruit is predicted as soon as the effect of the advance in oranges is felt in the market.

Enormous Demand for Machinery and Supplies of Many Kinds Being Created by the Development of Florida and Other Southern States

Reprinted from MANUFACTURERS RECORD, issue of February 19, 1925.

Pulsating with activity such as has rarely been seen in any part of the United States, Florida's development is bringing about a remarkable construction of hotels, apartment-houses, office buildings and all other lines of building work. It is at the same time creating a heavy demand for road and street building equipment of every charactor, for materials needed in the extension of waterworks, sewerage systems and everything else which goes with rapid increase of population and a vast increase in building work.

The construction of hotels and apartment-houses costing from one million to many millions of dollars means a vast expansion in the boilers and engines, and every other line of machinery with which to erect these buildings and with which to equip and operate them when completed. Typical of this sort of work will be the building in the Miami section by the Bowman interests, as announced in a recent issue of the Manufacturers Record, to represent an investment in a hotel, in an adjacent club and in other construction activities there of about $10,000,000. Practically all of this will mean a great increase in the demand for all the things which enter into the building and equipment of a great hotel.

From St. Petersburg comes the announcement of a $3,500,000 hotel to be constructed there, and scarcely a day passes without the report of some building, hotel, office or apartment-house costing from $500.000 up to $1,000,000 or more.

Highway work is being pushed with unwonted vigor. All Florida is alive and hustling. Even the big land developments and subdivision operations are intensifying the demand for machinery. The entire state is being covered by a system of great busses carrying 24 passengers each, whose lines make a comprehensive network of transportation.

Rampant optimism prevails everywhere, and probably the most optimistic people taking part in Florida's development are railroad builders, and the heavy investors from other sections who are pouring their millions into the state.

The activity in Florida has become nation-wide in discussion and in concentrating the thought of millions of people not only upon Florida but upon other Southern states.

The joy of achievement which is under way in Florida, creating this enormous demand for all lines of machinery, road building and equipment of houses, great and small, is spreading into every part of the South.

The whole South is catching an inspiration, realizing that what Florida is accomplishing is demonstrating what can be accomplished in other states by the same spirit of enthusiasm, of optimism, of tireless energy of faith in one's own country, and the co-operation of railroads, of business organizations and of men of all classes in upbuilding work.

The movement is on, sweeping over the entire South and from Maryland to Texas, and through Oklahoma and Missouri there is a new spirit alive. It is the awakening of the latent energies of the people of the South, which is being intensified by the southward trend of men and of money, of brains and of brawn.

It is a great movement that is stirring the South, and is indeed stirring the entire nation.

People have been too long accustomed to think of the opening of coal mines, of the building of a furnace or a cotton mill as the only things that create a demand for machinery and supplies. In the aggregate, the building of highways, of hotels and apartment houses and office buildings and dwellings is probably producing a larger demand for machinery and hardware and roofing and furniture and all other things which enter into these enterprises than even the great industrial activities which are usually counted upon as the chief buyers of equipment of all classes.

Florida's development must, therefore, be looked at by the manufacturer of every line of machinery, boilers, engines, architectural iron work, cement, hardware, roofing and the great host of other things as a distinct and definite creator of a new market in the South, and a larger market in that section than has ever before existed for this wide variety of machinery and of materials. So great is that activity that it is wellnigh impossible for the Manufacturers Record to cover the whole story fully in its Construction Department from week to week, or in its Daily Bulletin of Construction News from day to day.

It is a mighty movement, destined to have a mighty influence upon the amount of equipment and supplies of all kinds, creating a market throughout the whole South which must be cultivated by every concern in the country which desires to get its share of this enormously expanding business.

PREVENT DECAY OF TREES BY DRESSING PRUNING WOUNDS

All wounds made by pruning which are above one-half inch in diameter should be protected from decay by some means. Limbs should be cut off so that no stub is left. The wound should be promptly covered with a good lead paint or other protective dressing, according to horticulturists at the College of Agriculture, University of Florida.

Such a dressing, which has shown considerable merit and will last considerably longer than paints in our climate, is made of the following materials: 1 pound resin, 2 ounces tallow, 1 ounce spirits of turpentine, and 6 ounces wood alcohol.

Melt resin and tallow together. After cooling somewhat, slowly add alcohol and then turpentine, stirring continuously.

The mixture will harden on exposure to air and should be kept in a wide-mouthed, tightly corked bottle. Apply with a brush.

Large wounds which were covered two years ago with this dressing have shown no decay whatever and the dressing itself appears as intact as the day applied.

Ordinary straw contains about as much plant food material as does barnyard manure, but this material is not as ready available to the plants as is manure.

Valencia Sweet Orange Exports

In a report to the Department of Commerce, Consul J. S. Calvert, Barcelona, Spain, states that the American Consul at Valencia reports that up to the end of November, 1924, 1,408,900 cases of the 1924-1925 production of sweet oranges had been exported from Valencia as compared with 976,434 cases of the previous year's (1923) production up to the same date. The Consul at Valencia further reports: "The orange shippers are very worried over the fact that the present commercial treaty with Belgium which expires on December 10, 1924, may not be extended by the Spanish government until a new treaty is drafted between the two countries. These merchants through the various chambers of commerce in this region (Valencia) have sent petitions requesting the government to open negotiations with the Belgian government with a view to having the present treaty extended until a new one is put into force. It must be noted that Belgium is Spain's third best customer as regards the the importation of oranges, and if the treaty is not extended, the consequences are that the Belgains will turn to Italy for their orange supply, which two nations at present enjoy a most-favored-nation commercial agreement. The price for oranges here has dropped from 3.00 pesetas to 2.00 pesetas per arroba, while the price offered in the British market is from ten to fourteen shillings per case. The market is quite active with heavy shipments, especially to British, German, and Belgian ports."

In his report to the Department, Mr. Calvert also states that with respect to sour oranges, the following was submitted to him from the American Consul at Seville, in which Consular District most Spanish sour oranges are grown: "The sour orange crop will commence to be gathered about December 5 and may be until March before all the oranges are gathered. Practically all of this crop is taken by England and Scotland for marmalade manufacture. A few small shipments will probably be made to the United States of the pulp. Seville sour oranges and Malaga bitter oranges are the same, the terms 'sour' and 'bitter' being used in the English market to distinguish the origin of the oranges—whether Seville or Malaga. The present Seville crop has been estimated at 150,000 half chests, somewhat smaller than in average years, and of a good quality but inferior to last year's high grade fruit. This office is unable to explain the press reports from England that marmalade will be much cheaper after this new crop is elaborated as prices in Seville are firm and slightly more than on the last crop."

ITALIAN LEMON EXPORTS INCREASED DURING DECEMBER

Lemon exports to all countries from Italy showed an increase of 40,000 boxes during December, 1924, states Vice-Consul A. P. Cruger in a report to the Department of Commerce. December exports according to the trade, were 154,035 boxes; shipments to the United States during December amounted to 14,086 boxes, a 50 per cent increase over the corresponding period of 1923. Total declared exports of lemons to the United States during the calendar year 1924 reached 137,960 boxes valued at $313,293.87 as compared with 350,690 boxes, valued at $650,371, for the calendar year 1923. Keen competition on the part of California growers, the protective tariff, and the fear of the United States quarantine, are said to have adversely affected business with America states Mr. Cruger.

The London and Hamburg markets for lemons are said to be comparatively quiet but good business is being transacted with Russia, according to the trade, as a result of the resumption of diplomatic relations between the two countries—Italy and Russia. Over 20,000 cases of Italian lemons were shipped to Black Sea ports during the month.

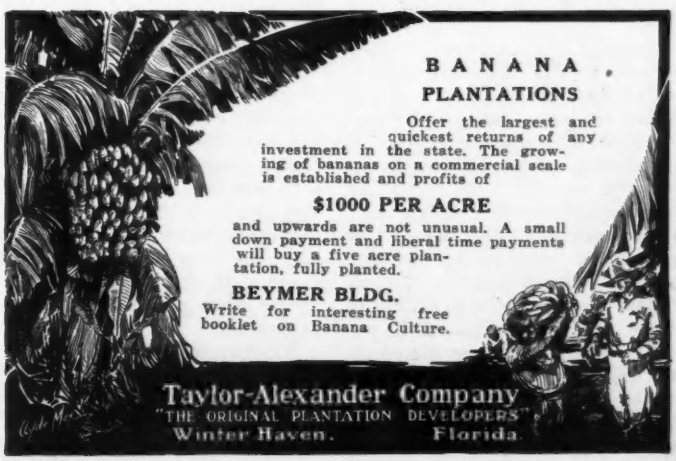
It is predicted by the Secretary of the "Camera Agrumaria" (Citrus Fruit Grower's Association) that the crop of winter lemons—an intermediate crop between the "prinofiore" and "verdelli"—will be about 25 per cent larger than it was last winter when it equalled that of a good average year. No statistics are available, however.

375 GAL. ORANGE JUICE GIVEN AWAY BY UNITED REALTY

As an advertisment for the community, and its citrus industry, the United Realty Company has been dispensing free orange juice at its tract office in Carleton Terrace during the past two months and a half, it being found that 375 gallons has been given to those who have stopped there for it, an average of 5 gallons daily, says the Cocoa, Fla., Tribune. Some grape juice has been dispensed also.

Those in charge of the tract office state that there have been 2000 or 3000 Cocoa and Rockledge folders distributed to the traveling public to peruse, which is good work for the community. For the convenience of the public, also the United Realty Company has maintained sanitary rest rooms for ladies and gentlemen.

At the end of the year 1924 more than 60,000 herds of cattle containing over 1,000,000 head had been officially accredited as free from tuberculosis. The work of tuberculosis eradication in the United States is progressing rapidly.


BANANA
PLANTATIONS
Offer the largest and quickest returns of any investment in the state. The growing of bananas on a commercial scale is established and profits of
$1000 PER ACRE
and upwards are not unusual. A small down payment and liberal time payments will buy a five acre plantation, fully planted.
BEYMER BLDG.
Write for interesting free booklet on Banana Culture.
Taylor-Alexander Company
"THE ORIGINAL PLANTATION DEVELOPERS"
Winter Haven. Florida

Detailed Report Made on Texas Frost Damage

From The Valley Farmer and Fruit Grower, San Benito, Texas

Committee of Valley Horticultural Society Finds Some Value Resulting As Well As Loss From Freezing Weather of December, Although Complete Check Cannot Be Made Until Spring.

Including a statement of conditions regarding scale and other orchard pests and boll weevil, the frost reporting committee of the Valley Horticultural Society made report of its findings in the Valley following the December freeze.

This report is now out of date so far as it might affect market prices or emergency work in the orchards but it is very much worth while as the committee's general view of what happened through the Valley as affecting plans for next winter and modifying orchard practice.

The report follows in full:

This report pertains to the freezes which occured in the Valley, Saturday, Sunday, Monday, and Tuesday, December 19, 20, 21 and 22, and also Christmas Day, 1924. Because of lack of time and the evident similarity of effects the investigations were only carried on in Cameron County, with the exception of a few visits in Hidalgo County.

This report is only a preliminary one and will be followed by a more complete one in the Spring when the full results can be noticed.

The damage in the various communities in Cameron County was about the same, but Hidalgo County seems to be a trifle less hurt than this county by this particular cold weather.

Apparently the damage to truck crops was greater than was at first expected. As was expected, the freezes killed the very tender Fall vegetables such as tomatoes, egg plant, peppers, okra, green corn, beans, potatoes and squash. These crops had mainly been harvested and thus their loss was negligible. The tops of turnips and beets were frozen and thus they were injured slightly. Carrots were also injured and it is estimated that the yield wes decreased 20 per cent. The injury to cabbage was greater and the tonnage will be decreased about 40 per cent. Some fields were so badly injured that they have been plowed under in preparation for spring crops.

In the work with citrus fruits it was found that practically the same results were noted here as recorded in the University of California publication Bul. No. 304, "A Study of the Effects of Freezes on Citrus in California." This bulletin records some very interesting facts and Valley farmers should secure copies of that publication.

Lime Trees—These trees were damaged mostly by the freeze. The branches were killed back to the main trunk in most cases.

Lemon Tree—These trees also severely injured with a large percentage of the smaller twigs killed and the trunks split. There was very little fruit left on the trees and thus the injury to the fruit crop was not worth mentioning.

Grapefruit—The trees were badly injured in many cases. The main injury seems to be shown by the splitting of the bark and the falling of the fruit. Fifteen per cent of the grapefruit seems to be frozen and thus unmarketable. A large amount of the fruit were injured by the freeze and thus perhaps caused the fruit to drop. The fruit wood which bears the buds from which next years crop is produced does not seem to be injured. There was a marked difference in the resistance as shown by some of the varieties but this will be examined further and reported at a later date. The Marsh Seedless seems to have withstood the low temperatures in a satisfactory manner.

Oranges—The orange trees were less injured than any other trees in the citrus group. There was more fruit injured than was grapefruit, however. It would seem that about 25 per cent of the oranges were frozen. Many unfrozen oranges fell from the trees and fair percentage of the frozen fruit remains on the trees, as is also true with grapefruit. There was much difference between the manner in which the various varieties were the most injured. This will be covered in the final report in the spring when the full results can be calculated.

Tangerines—All the fruit on the tangerine trees was frozen and all leaves dropped off. The twigs have been killed back in many cases and thus they have been injured more than oranges or grapefruit, and less than lemons or limes.

Nursery Stock—Nursery stock was severely injured and the loss would seem to be about 50 per cent. The loss of stock budded last fall seems to run near to 95 per cent in many cases. Trees which had been budded in 1925 were the least injured. It would seem the best policy to wait until late spring to determine the full injury when it shows up better.

When two fruit were touching each other, or where they touched a twig or bunch they were much more injured than those which were not growing in this manner. In early fall harvesting it might be well to pick the fruit where they rubbed together or touched a branch.

Excellent results were obtained by those who used orchard heaters. Some who had heaters the entire time and so they used the heaters at the times when the temperature was the lowest on the outside. These men secured excellent results for their efforts. This cold weather showed that it was a waste of money to buy heaters and not use them. It also showed the necessity of having an ample supply of fuel for the heaters. In the young orchards not having windbreaks, it would have been rather useless to try to burn heaters when considering the strong winds which accompanied the low temperatures. This was the reason many did not attempt to use their orchard heaters.

Banking of trees with dirt has apparently given good results but this will be more thoroughly investigated when the young trees have had ample time to show the full effects of the freeze. No beneficial results from wrapping with paper, corn stalks, etc., are evident at this time, comparisons however when the full effects of the freeze are obtainable may indicate that this has some value.

In a ten acre mature orchard the thermometers on the inside registered one degree higher consistently than those on the outside. Trees on the outside of orchards were much more injured than those near the middle of the grove.

There seems to be some relation between the time of the irrigation and the amount of damage. Trees which were sappy, show more injury than trees in the dormant stage. Late

irrigations were made necessary in many groves because of the failure of growers to put sufficient moisture in the soil in the late summer or early fall. Therefore it would seem advisable to give the grove a good irrigation before stopping cultivation in the fall.

Insects.

One benefit accruing to the growers from the effects of the freeze is the great mortality to insects, especially those infesting citrus trees. While the loss of the foliage was comparatively light, considering the duration and severity of the cold, a careful examination of the remaining foliage indicates that a large majority of the scale insects and rust mites were killed. Effects seems to be about as follows on the different kinds of insects:

Purple Scale—many of these scales have been examined and in practically all of them the adult appears to be dead. However, most of the scale coverings also contained eggs show no signs of injury whatever. A careful watch should be kept on these scales and when the eggs hatch and the crawlers emerge, a spray application should be made.

Florida Red Scale—In all of the examinations made, very few live Florida Red Scale have been observed. Crawlers present under the mother scale were also killed.

California Red Scale—Like the Florida Red, this scale seems to be very susceptible to low temperatures, and great majority of them have perished. Careful timing of the spray application in the future should keep groves—even those previously heavily infested—commercially free from insects.

Chaff Scale—Like the other scales mentioned this one seems to have been very well cleaned out.

Rust Mites—Very few living rust mites have been observed since the cold. However, the following statement by Mr. W. W. Yothers, government entomologist, was made about a year after the 1917 freeze in Florida and gives a very good idea of what may be expected of rust mites:

"The almost complete extermination of this species by the freeze and its reproduction to billions in six months is a most remarkable biological fact. According to computation, one mite would have a progeny of about 12 million in about 5½ months, and I believe this is just about what actually took place . . . 'The sands of the sea' or the 'stars of the heaven' are the only expressions that will enable one to understand how abundant this species actually was, the last of July and early August," (about six months after the freeze.)

Boll Weevil—Due to the street report that this insect has been exterminated by the cold, it is deemed advisable to contradict this report. The boll weevil has not been exterminated by the cold. In fact a short while after the freeze, in examining an orange grove, we found an adult weevil hibernating, apparently in good health. Further, since the weevil are not exterminated by the cold in more northern cotton sections, there is no reason for expecting cold weather to annihilate them in the Valley.

Unless spray applications are properly made, the scale insects mentioned above will all show normal infestation before the end of the summer. Unless trees are dusted with sulphur solution, they will show an abundance of rust mites by the middle of the summer, as set out in the statement of Mr. Yothers, quoted above. The freeze has helped you to the extent of keeping your grove clean. How much you will profit by this opportunity, will depend upon how you take advantage of it.

Growers should not think from what has been said above that insect control can be left off this year. Rather, they should realize that their trees are reasonably clean now, and that by carefully timing their spray applications, and by thoroughly covering the trees when they do, they can keep them clean.

In writing to advertisers, please mention The Citrus Industry.

TRADE MARK
SKINNER
DURABILITY EFFICIENCY

Double Strength

NICOTINE DUST

Sure Death to Aphids

Freshly mixed every few days and chemically treated to give off a gas that kills even if it does not touch. Sure death and complete control of Aphids. Bulletin No. 174, March 10, 1925. University of Florida, says to spot dust with nicotine if just starting and if general dust or spray the whole tree thoroughly.

WE'LL SHIP QUICKLY—TRY US

5 lb. can	$1.10	50 lb. can	$9.75
10 lb. can	2.15	100 lb. can	18.00
25 lb. can	5.13	150 lb. can	26.63

Feeney Hand Duster $20.00
Postage extra if ordered my mail

Skinner Machinery Company

Chemical Department Dunedin, Fla.

Hints To Housewives

From Home Demonstration Specialists, Tallahassee, Fla.

George Washington Hatchets

Mix and sift 2 cups flour and ½ cup brown sugar. With ¾ cup butter and work into first mixture, using tips of fingers. Roll to 1-3 inch in thickness and cut into hatchet shapes, which can be easily accomplished with a pasteboard pattern and sharp knife. Brush over with yolk of egg diluted with ¾ teaspoon water, and garnish each with with ½ a candied cherry. Bake in a slow oven.

Shapleigh Croquets

Use 3 tablespoons butter, ¼ tablespoon finely chopped onion, ¼ cup flour, 1 cup chicken stock, 1 teaspoon salt, ½ cup cold boiled ham, cut in small cubes, ¼ teaspoon paprika, ⅛ teaspoon pepper, few gratings nutmeg, yolk 3 eggs, 1¼ cups chicken, cut in small cubes.

Cook butter with onions 3 minutes, stirring constantly. Add flour and stir until well blended; then pour on gradually, while stirring constantly, chicken stock. Bring to the boiling-point and add seasonings, yolks of eggs slightly beaten, chicken, and ham. Spread on a plate to cool. Shape, dip in crumbs,egg and crumbs, fry in deep fat, and drain on brown paper. Remove to hot serving dish and garnish with parsley.

Knickerbocker Figs

One-half pound washed figs, maraschino cherries, pecan nut meats, 2 tablespoons sugar, 1 teaspoon lemon juice.

Stuff figs with cherries and nut meats, allowing two cherries and three nut meats cut in quarters to each fig. Mix remaining ingredients. Add figs, cover, and cook until figs are tender, turning and basting several times during the cooking. Remove to board, roll in powered sugar, and place in individual paper cases if they are at hand. Arrange on a plate covered with a lace paper doily.

Fruit Salad Dressing

Use 2½ teaspoons of salt, 1¼ teaspoons of pepper, 1½ teaspoons paprika, 5 teaspoons of powdered sugar, 1¼ cups of orange juice, ½ cup of lemon juice, 1¼ cups of olive or salad oil.

Mix ingredients and chill. Just before serving beat vigorously until thoroly blended.

Orange Blossom Salad

Use 1 dozen oranges, 1½ dozen bananas, 3 pounds of grapes, 1 No. 1 can of sliced pineapple, 6 heads lettuce, 2 cups of French dressing

Peel oranges and separate pulp, discarding all white membrane. Peel bananas and cut in quarter-inch slices. Cut grapes in half and remove seed. Drain syrup from pineapple and cut fruit into small pieces. Combine prepared ingredients, mix thoroly with the French dressing and serve on lettuce.

Grapefruit Salad

Use 12 large grapefruit, 1 quart of cut celery, 6 sweet green peppers, 3 sweet red peppers, 6 heads lettuce.

Remove grapefruit pulp, carefully discarding seeds. Clean and scrape celery and cut in half-inch pieces. Wash peppers and remove seed and membrane. Cut in two lengthwise, then cut across in thin slices. Mix grapefruit and celery and arrange on heart leaves of lettuce. Garnish with peppers and serve with mayonnaise.

Orange Salad Sandwich

Use 12 firm tomatoes, 12 oranges, from 8 to 12 Neuchatel cheeses, ¾ cup of minced olives, ¾ cup of red pepper, ½ to teaspoon of salt, ½ teaspoon white pepper.

Chop olives and pepper very fine and mix thoroly with cheese and seasonings. Cream mixture until soft enough to spread. Blanch tomatoes, chill and cut each in four slices. Peel oranges, removing all white membrane and cut each in four slices. Place a slice of tomato on three leaves of lettuce, spread thickly with cheese mixture, top with a slice of orange and serve with French dressing.

Orange Salad Supreme

Use 1 quart of diced orange pulp, 3 quarts of sliced apple, 1½ quart of cut celery, 3 cups of raisins, ½ teaspoon of salt, 1 teaspoon of paprika, 1½ cups of salad oil, ½ cup of lemon juice, 2 tablespoons of sugar.

Stew raisins slowly in as little water as possible until plump and tender. Drain, reserving liquid in which they have cooked. Beat together oil, seasonings, lemon, sugar and 1-3 cup of raisin water. Peel oranges and apples. Remove all white membrane from oranges and cut pulp in pieces. Slice apples and celery. Marinate fruit and celery in oil mixture 30 minutes. Drain and add raisins. Serve on shreded lettuce garnished with mayonnaise.

Orange Marmalade

Use 9 oranges, 8 pounds of sugar, 4 lemons, 4 quarts of cold water.

Wipe fruit and cut crosswise in as thin slices as possible, removing seed. Put into a preserving kettle, cover with water, and let stand 36 hours. Place on range, bring to boiling point, and let simmer two hours. Add sugar and let simmer one hour. Turn into sterilized jelly tumblers and cover each glass with a circular piece of paraffin paper, then with a larger circular piece of letter paper, fastening paper securely over edge of glass with mucilage.

THE CITRUS INDUSTRY

If is isn't one thing it's another and that holds good in the citrus industry. Last year was a mighty hard year on the growers and this year to date while considerably better, has been nothing to brag about particularly. Now comes the Georgia floods and shut down on the shipping of fruit for several days at least just at the time when the fruit should be hurrying to market, because the shipping season is growing shorter.

All of which leads us to the conclusion that it is high time the money and brains of the citrus industry was figuring out ways of shipping our greatest product other than as fruit. It is getting to be a tremendously bulky crop—40,000 cars or more yearly,—and the tonnage will grow for many years to come. The bulk alone is one reason why much of the fruit should be shipped in more condensed form. Say marmalade, citric acid, pectin, candy, or fruit juice. Then, too working up the by-products in more condensed form would leave the market open for the better fruit to bring better price.

Speed the day when we will see by-product factories of many sorts at work in our Florida towns.—Lake Wales Highlander.

BIG NAVEL ORANGE PLACED ON DISPLAY

A prize orange is being exhibited in the window of the Vero Realty company this week. It is a Florida navel, weighing one pound, 10 ounce and grew in E. C. Walker's grove. Navel oranges have not been cultivated in this vicinity to any large extent, but that they can be grown successfully here is proved by this specimen.

The best part of potatoes lies next the skin. Rub the well cleaned potatoes with fat before baking, and they will be delicious.

HEARING CALLED TO CONSIDER PORTO RICAN PLANT QUARANTINE

A public hearing to consider the bringing of Porto Rican fruits and vegetables under permit and any restrictions necessary to prevent the entry into the United States of certain pests known to occur in Porto Rico has been announced by the Federal Horticultural Board of the United States Department of Agriculture at Washington, D. C., March 20, at 10 a. m. Among such injurious insects are the West Indian fruit fly and the bean pod borer.

Quarantine No. 56, issued by the board August 1, 1923, brought under restriction, for the purpose of inspection and safeguarding entry, all fruits and vegetables imported from foreign countries. As a possession of the United States, Porto Rico was not covered by this general action. The board believes, however, that there is just as much reason for regulating the importation of products from Porto Rico as from Santo Domingo, Cuba, and other West Indian Islands. A number of years ago the entry of fruits and vegetables from Hawaii was placed under regulation.

Persons interested in the proposed action of the board may attend and be heard either in person or by attorney.

WHAT IS THIS FRUIT?

Editor Citrus Industry:

Some years ago I came across a curiosity in Citrus fruit. It looked like an orange but was almost as solid as a potato. Only a streak of pulp and no juice. The foliage was devoid of odor. This tree grew below Center Hill, Fla., but was killed in the Big freeze. About two years since I came across the same fruit in a grove near Umatilla, Fla. I pulled what I supposed was an orange but found it solid. This fruit would be valuable for making a substitute for citron. If any one should want to propagate this fruit I could point out the tree.

Thos. W. Spicer,
Leesburg, Fla

BRITISH COLUMBIA PACKS ORANGE MARMALADE

It is reported that approximately 32,000 cases of orange marmalade will be packed in British Columbia during the coming season, if sufficient oranges are available, writes the American Consul at Vancouver to the Department of Commerce. There is said to be an increased demand in western Canada this year for orange marmalade but manufacturers are understood to be finding it difficult to procure sufficient supplies of bitter oranges. Some firms placed early orders in Japan but have found it difficult to obtain supplementary supplies, it is said.

ORGANIZE A BAND
in your town
OUR SPECIALISTS WILL ASSIST IN ORGANIZING AND EQUIPPING A BAND OR ORCHESTRA FOR YOU.
DISTRIBUTORS OF
CONN
WORLD'S LARGEST MANUFACTURERS OF HIGH GRADE BAND AND ORCHESTRA INSTRUMENTS
M. L. PRICE MUSIC CO.
TAMPA, FLA.

HOTEL HILLSBORO
Tampa, Fla.
TOP O' THE TOWN
European Plan, Fireproof 300 Rooms With Baths
THE CENTER OF TAMPA

T. W. RAMSEY
LUMBER
HOUSE AND BUILDERS SUPPLIES
WINDOWS AND DOORS
We ship large or small orders
17th St. and 6th Ave. TAMPA, FLORIDA Phone 51-219

BUCHANAN & CROWDER
REAL ESTATE
RESIDENCE, BUSINESS PROPERTY AND ACREAGE
Personal Attention to all Details.
Office—
302-3 Citrus Exchange Bldg.
Phone—2752 Tampa, Fla.

Florida Fruits to Germany

Since the Florida Citrus Exchange shipped its first carload of grapefruit to Hamburg, Germany, three months ago, it has marketed an additional 3,000 boxes, or nearly 9 carloads, in that country, it was announced by L. C. Edwards, president of the Florida Citrus Exchange.

The Southern Citrus Growers Association at Lakeland, which has been packing the grapefruit for the Hamburg shipments, telegraphed Mr. Edwards that it had just received a cabled request for another carload of grapefruit from the Exchange's sales agents in Germany. Shipment on this latest order will probably go forward next week.

Mr. Edwards expressed himself as being well satisfied with the progress of the work in developing foreign markets for Florida grapefruit, particularly in Germany and other central European countries.

"We feel that we have done very well in shipping fruit to Europe in the past three months," Mr. Edwards said, "but it is only the beginning of what we expect to do when the Florida Citrus Exchange perfects necessary water transportation facilities. When these arrangements are perfected, the lower transportation charged which will then be available to our growers will naturally serve to greatly increase our shipments to both European and domestic markets."

The Lakeland shipments to Hamburg are being made by rail, to Savannah, and thence by boat direct to Germany. Most of the fruit has gone forward under ventilation only, and has arrived at its destination in sound condition. The transportation charge for a shipment from Lakeland to Hamburg is but a few cents a box more than the cost of the average fruit shipment from Florida to New York. Satisfactory returns are said to have been received from the fruit sold in Germany.

Florida Good Roads Association

The Florida Good Roads Associaton was organized in a great mass meeting in the Orange County court house in Orlando on Thursday morning, February 19, at which meeting there was present delegations representing a group of important counties of the state. The following officers were elected: President, Jack Worthington, Lake Wales; vice presidents, Dr. J. H. Therrell, Ocala, and Hon. J. J. Parrish, Titusville; Secretary, Karl Lehmann, Orlando; treasurer, J. N. Holmes, Tampa.

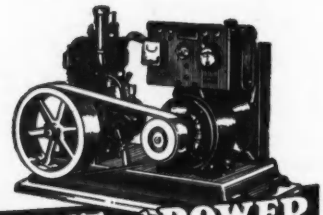
An executive committee of three will be selected from the directors elected one from each county in the state that is interested in the purposes of the program of the meeting, as set forth in the resolutions adopted. The directors already elected are as follows: Orange County, S. S. Sadler, Tangerine; Volusia, Earl W. Brown, Deland; Polk, E. L. Mack, Lakeland; Lake, W. M. Igou, Eustis; Hillsboro, D. R. Crum, Plant City: Sumpter, C. W. Stewart, Bushnell; Osceola, Wm. Landis, St. Cloud; Marion, C. Ed. Carmicheal, Ocala; Highlands, Gilbert Freeman, Avon Park; Seminole, Ed. Higgins, Sanford; Putnam, Frank Fornsides, Palatka; Clay, Rev. E. S. Wilson, Green Cove Springs; Brevard, W. G. Warnock, Indian River City; Alachua, W. R. Thomas, Gainesville; Levy, W. J. Epperson, Bronson; Hardee, Joseph M. Crews, Wauchula. Every county in the state in sympathy with this program is urged to select a director as soon as possible and notify the Secretary.

The first meeting of the officers and directors will be held at Miami on the evening of March 9, at which time a delegation will be selected to appear before the state road department in its final budget meeting at Miami.

The directors will also select a strong delegation to go to Tallahassee during the session of the legislature to work for the accomplishment of the objects of the association.

A large number of men from the Florida Good Roads Association were present at St. Petersburg on March 13 to meet with other interested parties in a general Florida state roads convention called by the Tamiami Trail Association.

Every county in the state is invited to select at least one director as a member of the Good Roads Association. The policy and purpose of the state association is set forth in the report of the resolution committee consisting of Dr. J. H. Therrell, Ocala; W. M. Igou, Eustis; Gil-



LIGHT and POWER

Better lights and more power at less cost and less trouble. The Cushman is both a light and a **power plant.** Besides giving you all the electric light you need, it will also operate the pump, wood saw, corn sheller, feed grinder, etc., from the friction clutch pulley.

CUSHMAN

Price very reasonable and special terms of payment arranged. Send for circular on Light Plants. If interested in prices on engines, ask for Engine Circular.

12 Months to Pay

Cushman Motor Works (23)
891 N. 21st St., Lincoln, Nebr.

Southern Water & Supply Co.
Distributor
Tampa, Florida.

"COULD BETTER FERTILIZER BE MADE WE WOULD MAKE IT"

Get January price list Mixed Fertilizers. "SIMON PURE and GEM BRANDS" now ready. QUALITY first, Fair prices. Also insecticides, sprayers, dusters and dusts. E. O. PAINTER FERTILIZER COMPANY, Jacksonville, Florida.

If You Want a

SUPERIOR GROVE

Plant

Superior

Nurseries

Trees

M. J. Daetwyler's

SUPERIOR NURSERIES

Orlando, Fla.

bert Freeman, Avon Park; S. S. Sadler, Tangerine, Orange County; Earl W. Brown, Deland; J. J. Parrish, Titusville; C. W. Stewart, Bushnell, and M. R. Anderson, Lake Wales, the resolution follows:

RESOLUTIONS PASSED AT GOOD ROADS MEETING HELD IN ORLANDO

February 19th, 1925.—J. H. Therrell, Chairman; Gilbert Freeman, Secretary of the Committee.

Whereas the State Legislature of 1923 laid out for the first time in Florida history a real praticable program of road construction to serve the best interest of the state; and

Whereas this program has not yet been completed,

We, the representatives of cities, Counties and Civic organizations of Florida assembled in Orlando, in Mass meeting, this 19th day of February 1925, do recommend

That the Legislature of 1925 make no change whatsoever in the present road law as passed by that body during the session of 1923.

AND BE IT FURTHER RESOLVED that we hereby constitute ourselves the Florida Good Roads Association for the purpose of furthering the present Florida Road Program.

AND BE IT FURTHER REOLVED that we invite all Florida to unite in carrying out this program.

NEW NURSERY INSPECTOR

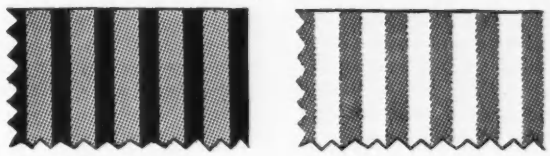
The State Plant Board has appointed James G. Goodwin as nursery inspector to succeed F. M. O'Byrne, who resigned on February 3 to enter the commercial field. Mr. Goodwin has been in the employ of the Plant Board since October, 1915, during which time he has seen service in every line of activity in which the Board is engaged, including citrus canker eradication, plant quarantine work and nursery inspection. For five years he was chief clerk in the Board's offices at Gainesville and at present is head of the apiary inspection department, in charge of the eradication of honey bee diseases.

He is a graduate of the Texas Agricultural and Mechanical College and also holds the degree of M. S. from Iowa State College. The Board feels that he is exceptionally well qualified by training and experience to hold the highly important and responsible position of nursery inspector for the State.

In writing to advertisers, please mention The Citrus Industry.

Men! here it is

A Fine Cloth for a Gentleman's Work Garment



Morocco Stripe *Express Stripe*

You can be proud of a garment made of Stifel's Work Cloth. It is the most refined work cloth on the market today. It comes in two neat and attractive designs, both new and up-to-date.

The Morocco Stripe is a two-tone cloth which has a rich blue effect.

The Express Stripe has a rich, white background with either blue or black stripes.

Garments made of Stifel's Work Cloth not only wear longer than ordinary work cloth materials, but the colors are fast and they can be washed at home indefinitely, which is a big economy to you.

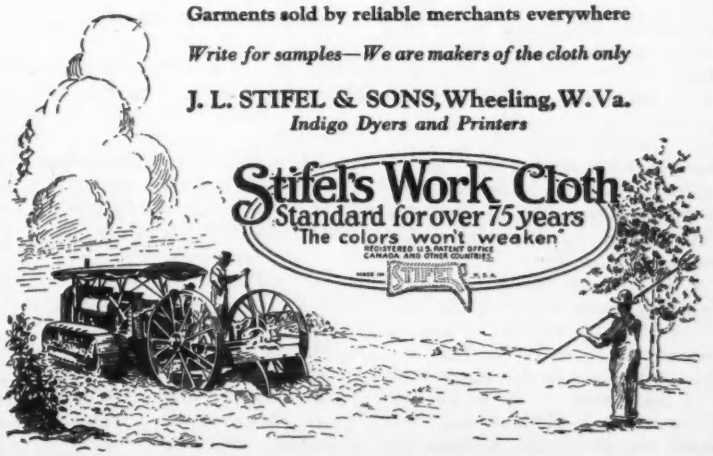
To make sure you get garments made of Stifel's Work Cloth, look for the Boot-shaped Trade Mark on the back of the cloth. The Standard for over seventy-five years. It's your protection and guarantee.

REG. U.S. PAT. OFF. STIFEL

Garments sold by reliable merchants everywhere

Write for samples—We are makers of the cloth only

J. L. STIFEL & SONS, Wheeling, W. Va.
Indigo Dyers and Printers



Grapefruit as Health Food

That grapefruit is highly beneficial in treatment of influenza, la grippe, pneumonia and kindred ailments has been demonstrated in the public work of Dr. W. A. MacKenzie, of Leesburg, Fla., who is mayor of Leesburg and a member of the Florida legislature. Dr. MacKenzie recently prepared the following report on the results he has obtained in the use of this fruit, which, in view of the influenza now prevalent in many sections of the country is of general interest:

"When I began to notice that Spanish influenza was becoming prevalent in the United States during 1918 I realized that this was a disease with which the physicians of America had little experience. I likewise saw the scarcity of physicians owing to the war and therefore endeavored to thoroughly post myself as to the cause and real nature of the disease. The literature concerning this trouble was very meagre, but I finally found a translation from the Spanish which had originally been written by a great Spanish pathologist. He had made exhaustive experiments and had found that bacillus causing influenza thrived in an acid medium and did not thrive in an alkaline medium.

"He suggested no treatment, but the treatment was plain; that is, to render the body as nearly alkaline as possible.

"I volunteered in the Public Health Service in 1918 and in sixty days treated 502 cases, many of them of the most virulent type of influenza complicated with pneumonia and severe hemorrage.

"My treatment was simple. I absolutely stopped all food, as I always do in plain pneumonia cases, because food is a tax on the diseased digestive apparatus and is not assimilated; therefore of no value. It also tends to render the system acid. I gave my patients nothing of what is usually termed 'food', but large quantities of grapefruit juice, giving each patient the juice of several grapefruit daily. Grapefruit contains citric acid; also a bitter principal which is grateful to feverish patients. Citric acid produces an alkaline condition of the system, a thing few people, except physicians, know.

"In addition to the grapefruit, I gave a large dose of sodium bicarbonate, commonly known as baking soda, several times daily. This also tended to produce an alkaline condition of the system.

"I found that where I could not procure grapefruit the patients did not do nearly so well, but the more grapefruit juice the patient was able to take, the more rapid the recovery.

"Every one of the 502 cases recovered. I did not have a single fatality and I consider grapefruit the most important factor in such recovery.

"I sent a daily record of my cases to the State Health Department and raised general interest, so my correspondence was large from physicians who wanted to know my treatment, and in every case where it was used, the same satisfactory results were obtained. My father, Dr. W. R. MacKenzie of Illinois, and my brother, Dr. R. G. MacKenzie of Ann Arbor, Michigan, used grapefruit extensively, with the same satisfactory results.

"I consider grapefruit an absolute essential in the treatment of influenza, la grippe, pneumonia and kindred ailments.

"Grapefruit is finding a new use in medicine. Diabetic patients who cannot tolerate sugar to any degree, can not only tolerate grapefruit but are markly benefited by same. It relieves their thirst, their craving for sugar and decreases the amount of sugar in the system. I have tried this out in several cases and know this to be a fact."

SAND AND LAVA ROCK ARE WORTHLESS AS FERTILIZER

Once more a fake fertilizer is being sold in the State, and officials of the Florida Experiment Station are advising farmers to beware of fertilizers that do not contain ammonia, phosphoric acid, or potash. Such fertilizers have but little value.

Do not buy finely ground stone meal or lava rock for fertilizer. It is made largely of silica, which is the chemical name for sand, of which we already have plenty.

Do not be misled by testimonials. Experiment stations have tested out such materials and found them to be worthless.

If you know of anyone selling this material, you should report him to the Commissioner of Agriculture, for he is violating the law.

In writing to advertisers, please mention The Citrus Industry.

Florida has the essentials of a great honey producing state. If you have no bees on your farm or in your grove already, why not try a few colonies?

In writing to advertisers, please mention The Citrus Industry.

Higher Fruit Prices

for the Grower who

Plants BUCKEYE Trees

Fruit from scientificially grown trees is always better flavored. better developed and— IT BRINGS BETTER PRICES!

For 44 years BUCKEYE NURSERIES has supplied growers with only the very highest grade citrus trees.

Look ahead to the time when YOUR grove must compete in a market of highly developed fruits—and you will plant BUKCEYE trees now.

BUCKEYE trees cost no more than the ordinary kind.

Consult with us about trees.

money DOES grow on trees!--BUCKEYE TREES.

Buckeye Nurseries Inc.

at Winter Haven Florida

TAMPA ORLANDO

Do You Need an ENGINE

See the easy-starting 1½ H.P.

CUSHMAN

Compact, Powerful, Smooth-running, Throttle-governed, Hopper-cooled, fewer working parts retaining all the famous Cushman Quality that gives real engine value. Every part readily accessible. Every engine complete with sub-base. *Write us for catalog folder.*

Sizes 1½ to 20 H. P.

CUSHMAN MOTOR WORKS
633 N. 21st St., Lincoln, Nebr.

OVER 50,000 CUSHMANS IN USE

Sold by Farm & Home Machinery Co., Orlando, Fla.

MONEY IN GRAIN

$12.50 buys guarantee option on 10,000 bushels of wheat or corn. **No Further Risk.** A movement of 5c from option price gives you an opportunity to take $500; 4c, $400; 3c, $300, etc. WRITE TODAY FOR PARTICULARS and FREE MARKET LETTER. **Investors Daily Guide, S. W. Branch, Dept. B-15 1016 Baltimore Ave., Kansas City, Mo.**

Splitting of fruit caused by Dieback and Ammoniation can be stopped by the use of

NICHOLS
TRIANGLE BRAND
BLUESTONE
(Copper Sulphate)

With the proper care and foresight you can make this your most profitable year. The use of Nichols Triangle Brand Bluestone is your best insurance against loss in your grove operations. It is the brand most generally used by Citrus growers and Truckers for Dieback control and the preparation of home made Bordeaux Mixtures.

TRIANGLE BRAND COPPER SULPHATE
THE STANDARD OF QUALITY
99% PURE

NICHOLS COPPER CO.

25 Broad St. New York

Florida Fruits and Flowers

A Monthly Magazine devoted to diversification in fruit growing and to home and civic ornamentation.

The kind of a magazine you will enjoy in your home. It tells of the different kinds of fruits which can be successfully grown in Florida and it aids with helpful suggestions about ornamentals and flowers for your home or community.

FLORIDA FRUITS AND FLOWERS costs but $1.00 for twelve months. Pin a check or a dollar to this notice and mail to

Florida Fruits and Flowers

Bartow, Fla.

Why You Should Buy ORANGE BELT BRANDS

because it is

"Quality Fertilizer for Quality Fruit"

LYONS FERTILIZER CO
ORANGE BELT BRANDS
TAMPA, FLORIDA.

Lyons Fertilizer Co.

Tampa, Florida

Citrus Exchange Building
Eighth Floor

Cold Process Oil Emulsion

By W. W. Yothers, Orlando, Florida

There is a strong aversion among fruit growers to heating or boiling any materials used for spraying. This is especially true as regards lime-sulphur solution. Very few fruit growers now make their own material, preferring to purchase it already made up. This is also true as regards oil emulsion; only a few citrus growers, perhaps not more than half a dozen in the entire state, make their own emulsions. It was thought that cold process emulsions might appeal to the citrus growers more strongly and several formulae are here given.

Cold Stirred

This emulsion was among the first used in the state and it gave great satisfaction for several years. The large quantity of soap used makes it partake somewhat of the nature of a fish oil soap spray in spreading qualities and also makes it very stable and reliable. Samples of this have been kept for 15 years without spoiling.

The following is the formula:

2 gallons oil
1 gallon water
1 gallon fish oil soap

Use the above to 200 gallons of water for 1 per cent of oil.

Directions for preparation: In preparing the stock mixture, the soap should be put into a receptacle of about 5 gallons' capacity and the oil added in small quantities at first, and that the stirring be sufficient to keep the oil and soap in the form of an emulsion after each addition of oil. Thus, at first about a pint of oil should be added to the soap and the mixture stirred until no free oil appears. As the amount of oil is increased it should always be stirred or mixed thoroughly before the next addition is made. After the required amount of oil has been added and after free oil has ceased to appear on top of the soap, the water is slowly poured in, about 1 quart at a time. The only apparatus required to make this formula in a small way is an ordinary galvanized iron pail and a paddle.

The foregoing formula may be modified under certain conditions, as the quantity of soap will depend largely upon the time consumed in adding the oil and the amount of stirring; the amount of soap being lessened if the stirring be uniform and ample time be taken in the careful preparation.

It may be varied to contain different precentages of oil. This formula will not mix with deep well waters unless it is treated with glue or other stabilizers.

Cold Pumped Formula

For several years the following formula was made by heating the materials and then pumping to emulsify them. It was found by Colin MacDonald, Grand Bay, Alabama, that it could be made just as well by pumping alone.

2 gallons oil
1 gallon water

Use the above to 200 gallons to make 1 percent of oil.

2 pounds fish oil soap

Directions: Put the materials in a receptacle and pump two or three times. This formula will not mix with deep well water unless it is first treated with glue or other stabilizer.

Calcium Casenate Formula

This formula was first put out by the Missouri Station. It will mix with any water and also lime-sulphur solution. Although it is said to spoil easily this has not occurred with us. We would advise caution, however, if it is intended to keep the material over a week in hot water.

2 gallons oil
1 gallon water
8 to 12 oz. Calcium Caseinate

Directions: Add the Casenate to the water slowly, beating or stirring violently all the time, then add the oil. Pump until emulsified. If a hand pump is used the material may be pumped an hour or so until emulsified.

Kaolin Formula

This formula will keep a long time and will mix with any water or lime-sulphur solution. It is not difficult to make but has the disadvantage of being a thick paste and does not run or pour readily.

2 gallons oil
1 gallon water
2 2-3 lbs. Kaolin

Directions: Put the Koalin in the water and let it dissolve without stirring or other agitation; then add the oil and pump twice.

Glue Formula

Only recently we found that glue used alone made a perfect emulsion. After several experiments it was found that the following formula may be the most satisfactory.

2 gallons oil
1 gallon water
1 pound ground glue

Directions: Dissolve the glue in the water by soaking and add the oil; then pump twice or three times.

This is easier to make than the Calcium Casenate formula and will mix with most waters as well as lime-sulphur solution. While we have not experimented with it extensively this promises to be one of the best formulae ever given for home making of emulsions. This probably would spoil in hot weather in from 4 to 5 days.

Skimmed Milk Powder Formula

The following formula may also give fruit growers a larger choice in selecting an emulsifier.

2 gallons oil
1 gallon water
1 pound skimmed milk powder

Directions: Add the milk powder to the water, beating the mixture violently in a similar manner that Calcium Casenate is added to the water; add the oil and then pump 3 times. This formula is very easily made and promises much because of the ease of preparation. It will mix with lime-sulphur solution and no doubt with most any water which might be used for spraying purposes.

Of course we understand that hardly any of the above emulsions are new to chemical science but some of them have not appeared in Entomological literature or in magazines or newspapers adapted to fruit growers. We also understand fully that there are a good many other emulsifiers which might be used by fruit growers in making emulsions without heat.

Since these formulae only cost about one-half as much as proprietary articles this feature might appeal to certain growers. It is true, however, that several of the insecticide firms in the state have secured the services of men who have attained a most enviable reputation and this service after all is an important item in the successful control of pests and the prevention of fungus diseases.

CAR LOAD OF TANGELOES

The first car of tangeloes ever shipped from Vero was sent to New York this week from the W. T. Humiston grove west of town. The shipment was made by the American Fruit Growers and the fruit will be sold on the New York auction market. Mr. Humiston has the largest acreage af tangeloes in St. Lucie county and one of the largest in the state. The fruit is of unusually fine quality and has always commanded fine prices. This is the first year the yield has been sufficiently heavy to make car lot shipments.

The New Citrus Aphid

By W. W. Yothers, Orlando

This pest seems to be present in the state at the present time in injurious numbers. We are frequently called upon to advise as to what treatment should be given to lessen its ravages.

Where the infection is general, we advise spraying with oil emulsions at the rate of from 1-90 to 1-100. This material will kill all insects hit by the spray and it is unnecessary to use the expensive nicotine sulphate. Some manufacturers are advising the addition of a pound of soap to 50 gallons of water, in addition to the emulsion, which they claim will make the material spread better. Fish oil soap at the rate of about 12 or 14 pounds per one hundred gallons of water will also kill all that are hit by the spray. These materials will cause no injury whatever to the bloom.

In case the infection is in spots, it would be advisable to dust with nicotine sulphate dust or calcium cyanide dust. Some people claim that better results are obtained with the calcium cyanide dust than with the tobacco dust.

In case spraying is done, it is absolutely useless to use the so-called spray guns since the work must be done most thoroughly in order to get any results whatever from the treatment. Rather than use the spray guns I would advise the citrus grower to do absolutely nothing since he would then at least save what money would be expended in useless spraying.

While these aphids are present in numbers sufficient to be exceedingly discouraging, I am of the opinion that perhaps they will not do as much damage as indicated by the first impression.

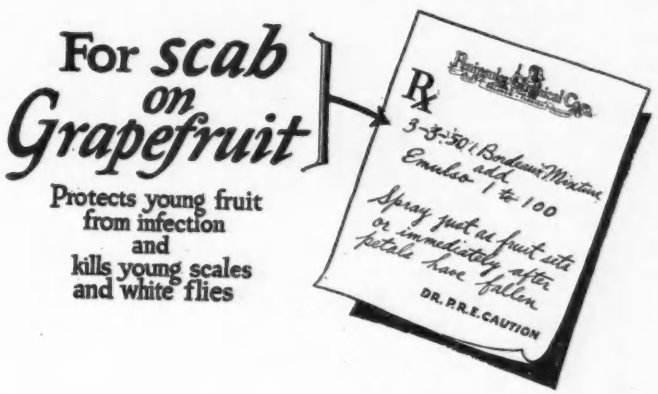
ASSISTANT MICROSCOPIST

Receipt of applications for assistant microcopist will close April 21. The examination is to fill a vacancy in the Bureau of Entomology, Department of Agriculture, for duty at Tallulah, La., and vancancies in positions requiring similar qualifications, at an entrance salary of $2,400 a year. Advancement in pay may be made without charge in assignment up to $3,000 a year. Promotion to higher grades may be made in accordance with the civil service rules.

The duties of the position are to study the adhesion of poison dust particles to the leaves of cotton plants and to sensitized plates, and to determine what varieties of cotton hold the poison best. This will require a large amount of microscopic examination to determine the presence and abundance of poison particles on cotton leaves that have been dusted under field conditions.

Competitors will not be required to report for examination at any place, but will be rated on their education and experience, and a thesis or publication to be filed with the application.

Full information and application blanks may be obtained from the United States Civil Service Commission, Washington, D. C., or the secretary of the board of U. S. civil-service examiners at the post office or customhouse in any city.


For scab on Grapefruit
Protects young fruit from infection and kills young scales and white flies
Rx
3-3-50 Bordeaux Mixture
add
Emulso 1 to 100
Spray just as fruit sets or immediately after petals have fallen
DR. P.R.E. CAUTION

Start the year right. Be ASSURED of a commercially clean crop of fruit and healthy trees.

EMULSO

Kills White Fly and Scale Insects

means SURE results.

We will gladly assist you in mapping out a definite schedule for your particular crop or crops. Write to our Service Department for schedule showing when and how to spray for best results. Hundreds of growers have discovered that this expert service we offer has saved them hundreds of dollars.

Discuss Foreign Shipments

Discussion of the citrus shipping agencies attending the Fruitman's Club meeting centered on arrangements to endorse shipments of Florida citrus fruit to Great Britain, France and Germany, and to widen the market for such products thruout Europe.

The economical value to Florida growers of the ship by water movement so long sponsored by the Exchange has now reached the attention of independent marketing agencies. In this movement to reach domestic and foreign markets by water the Exchange has long been the leader. It has this season taken definite steps toward the perfection of this method of distribution. Its officials expect in the very near future to offer its growers sound and perfected movement by water to both domestic and foreign markets.

With the view to making these markets and transportation methods available to all Florida growers a committee of three members of the Fruitsman's Club will be appointed by V. B. Newton, president. Tentative plans discussed included a shipment of fruit from Jacksonville in October, followed by one in November, another in December and two a month thereafter during the shipping season. Mr. Edwards of the Florida Citrus Exchange offered to provide fruit for these shipments if they were properly arranged. This offer is in line with movements already being made from Orange County packing houses of the Exchange via Savannah.

The meeting was attended by Mr. Owen of the Jacksonville Port Commission, who was interested in determining whether the shippers of Florida wished to obtain cold storage facilities at Jacksonville necessary to provide for the concentration of fruit at that shipping point for foreign distribution. The meeting was also attended by Mr. Guthrie of the Jacksonville Chamber of Commerce.

Mr. Whitsett of the Carolina Company, operating Shipping Board boats in both domestic and foreign commerce, offered to provide the necessary ships. He was ready to discuss details of a satisfactory schedule of shipments for the growers of Florida using refrigerator ships in the transportation of fruit. In this discussion the tentative price for transportation to the British Isles via the North sea was less than one third of the present freight rate now available to state growers.

Mr. Edwards, president of the Florida Citrus Exchange, says of the meeting: "I was more than delighted to have the Jacksonville Chamber of Commerce and Port Commission, and Mr. Whitsett of the Shipping Board with us to discuss arrangements for water transportation. This idea, which I am perfecting for Exchange growers, if carried to a success, will solve the present 'apparent' over-production of fruit.

Mr. Edwards continued, "Investigation shows that our grapefruit is being retailed in the United Kingdom at 25 cents each. When shipping facilities are perfected fruit can be retailed in London at ten cents.

"Shipments of pre-cooled fruit under refrigeration can be delivered sound in the markets of the old world. Information coming to my desk is very convincing that the quality of our fruit is so superior to that of other countries and sections that we may readily expect our fruit to be given a decided preference in consumer buying.

"These methods have never been attempted before this year by the Exchange. We are thoroughly committed to the idea of perfecting them for the use of our growers. If this action had been taken three years ago the present situation as applied to grapefruit would not exist. We would have had an adequate grapefruit market."

TWO SCIENTISTS SECURED TO STUDY FUNGI ON CITRUS TREES

The State Plant Board has secured Dr. E. M. Gilbert, professor of Mycology at the University of Wisconsin, who is on Sabbatical leave, to come to Florida to study entomogenous fungi. Dr. Gilbert will be here for a period of about two months, and will devote especial attention to fungi that attack the new citrus aphis.

The Plant Board has also secured the services of W. A. Kuntz, formerly Botany instructor in the Pennsylvania State College, to carry on this work. Dr. Gilbert will be here only long enough to help Mr. Kuntz get the work under way, and then the work will be conducted by Mr. Kuntz.

These investigators will be located at Lake Alfred, where a temporary laboratory is being erected on the grounds of the Citrus Experiment Station.

It is hoped that fungi of importance in the control of this new citrus pest will be found.

POPULARIZING FLORIDA CITRUS FRUITS

The above is an excellent representation of the citrus exhibit of the Winter Haven Growers Association at the Polk County Orange Festival in Winter Haven. This and other fine exhibits at Florida Fairs did much to popularize Florida fruits among Winter visitors.

CORAL GABLES---Miami's Master Suburb

Is America's Outstanding City-Region Development

More than $20,000,000 have already been expended in its landscape of transcending beauty, in its utilities, in its scores of miles of broad paved streets, sidewalks and white-way lighting. Scores of millions more will be expended in the next eight to ten years to broaden still further Coral Gables' appeal to home owners and investors. The $10,000,000 Miami-Biltmore Hotel, now building, is located in Coral Gables.

More and more are the shrewdest investors of this country turning to Florida every day for profitable investment, because nowhere else in America may be found such rapid growth. As Florida grows, so do the fortunes of those who invest here now. Wise indeed is the man or woman who, sensing the powerful significance of Coral Gables' development in the great growth of Miami, takes advantage of the opportunities for investment which are here now.

CORAL GABLES

MIAMI'S·MASTER·SVBVRB

George E. Merrick

Executive Offices, Administration Bldg., Coral Gables, Miami, Florida

General Sales Offices, 152-8 East Flagler St.

Branch Offices in All Florida Cities

PRELIMINARY RESULTS WITH THE BORAX TREATMENT OF CITRUS FRUITS FOR THE PREVENTION OF BLUE MOLD ROT

Continued from page 10

infect the calyx edges or other portions of the button in which these two stem-end rot fungi are established, and from which they later extend their growth into the stored fruit.

Two commercial shipments of boxes of oranges and of grapefruit were made, one during April and one in May, 1924, from points in Florida in regular fruit cars under refrigeration to Seattle, Wash., and by ordinary express to Washington, D. C. Not enough blue-mold rot developed in either the treated fruit for definite showing, even during a holding period of several weeks duration after arrival. The boraxed fruit in these shipments again showed a distinct reduction of stem-end rot when compared with the controls. Further tests will be made to determine the effect on blue-mold rot of the borax treatment in commercial shipments.

The question arose as to whether increasing the strength of the borax solution would give better control. At ordinary air temperature water saturation occurs at about 6 per cent or 7 per cent of borax but solubility increases rapidly with rise in temperature. At 85 degrees F. it is approximately 14 per cent; and at 122 degrees, approximately 18.5 per cent. In California lemons and oranges are usually washed for several minutes in water between 115 degrees and 120 degrees for control of brown rot without bad effect. In the warm-water tests the writers have used 10 per cent commercial borax in water maintained at 122 degrees, on plump but not turgid fruit that had been off the trees at least 10 days when purchased from the market. Seven tests, two with oranges and five with lemons, are averaged in figure 4. The percentages of rot are based on 275 fruit originally given each treatment. There is some difference in favor of the 10 per cent as compared with the 5 per cent borax dipping treatment. It is possible that soaking tests of several minutes in the warm solution would show an increased effectiveness. The question requires further testing under commercial conditions of handling the fruit.

In packing houses having soaking-tank equipment a convenient place for applying the borax treatment would be in this tank. Usually the fruit passes from the soaking tank to scrubbing brushes over which streams of water play. These would wash off most or all of the borax. In the absence of a soaking tank, or for the purpose of leaving as much as possible to dry on the fruit surface, the borax solution might be played over the scrubbing brushes in small streams from perforated pipes leading from overhead tanks, or some atomizing device might be used just before the fruit enters the drier. Where polishing brushes are used after the fruit has dried, much of the borax coating would be removed. Tests were made to determine whether the removal of the borax coating, either by washing the freshly treated fruit or by brushing those on which the borax had dried, would materially lessen the protective effect. The fruit was heavily inoculated and was packed away between layers of moist paper at room temperature. Figure 5 shows the average results of seven separate tests, five with lemons, and two with oranges, totaling 340 fruits. The strength of the borax solution was 5 per cent for five of the tests and 10 per cent for two.

These results indicate that removal of the coating of borax really makes a difference. This is at variance with the working hypothesis on the basis of which this work was undertaken. It may be that borax penetrates to some extent the tissues, especially at wounds, and thus has a residual effect even though the surface crystals are not present in quantity. However, one would naturally suppose that a surface coating of small crystals of an antiseptic substance that would readily dissolve in any moisture that would allow spore germination would give added effectiveness in preventing such germination or subsequent invasion by the fungus mycelium. After the brushing the deposit of borax crystals remained, or was even increased in depressions, but was removed from the high places.

Practical packing-house tests will be required to determine the most effective and economical way of applying the borax treatment. From these preliminary laboratory tests it seems that the treatment would be about equally effective in any one of the several methods of application discussed.

Tests were made on the effectiveness of borax treatments at various intervals after artificial inoculation. The best results were obtained when the treatments followed immediately. With the lapse of two and one-half hours the treated fruit was no better than the untreated control. On the other hand, the tests with "commercially sound" fruit taken from packing houses, frequently one or two

Hunting and Fishing

is a monthly magazine crammed full of hunting, fishing, camping and trapping stories and pictures, valuable information about guns, revolvers, fishing tackle, game law changes, best places to get fish and game, etc. Biggest value ever offered in a sporting magazine, only $1.00 for THREE WHOLE YEARS, or send 25c in stamps or coin for six months trial.

HUNTING & FISHING MAGAZINE
303 Newbury St. Boston, Mass.

THE ANGEBILT
Orlando's Most Distinctive Hotel
Fireproof—Every room with private bath—Fireproof
Excellent Dining Room Service 10th Floor
"The Height of Hospitality"
Orlando, Florida.
Arthur F. Landstreet, Manager

days after picking, indicate a material reduction in blue-mold rot and in stem-end rot, as is shown in figure 3.

It is important to avoid delay in treating the fruit, and borax treatment must not be relied upon to make up for careless handling. All the tests with severely wounded fruit indicate that the borax treatment will by no means prevent all of the rot. In general the laboratory tests had the advantage over carelessly handled commercial fruit of receiving the treatment promptly after wounding and had the disadvantage of being subjected to exceedingly severe wounding and holding conditions. The borax treatment should be regarded as a supplement to and not as a substitue for careful handling. It gives promise of having a place in protecting the fruit against a considerable proportion of the blue-mold rot that is likely to occur even with very careful handling, especially that incident during and after the packing process.

Borax has the advantage of being cheap and readily obtainable. It does not actively corrode metal and is not a poison. It is an article of common household use. The coating, even when freshly made with 10 per cent solution, is not very conspicuous on oranges and lemons; on grapefruit it shows at first somewhat more prominently as a grayish coating. After the fruit has been wrapped and packed and held for a week or more, one must look very closely to detect any difference in appearance between the treated and untreated fruit. It does not seem probable that the borax coating, even if all is left on the fruit, will detract materially from its appearance or affect its marketability.

As is well known, regulations of the United States Department of Agriculture, made under the pure foods act, prohibit the use of borax or certain other preservatives in food products. In the case of citrus fruits the application of borax is made to the outside of the peel, a portion of the fruit that is not regarded as edible and that is discarded in the ordinary consumption of the fruit. If the fruit is washed before using, the adhering borax is readily removed. In commercial establishments for extracting juice and for manufacture of citrus by-products the general practice is to wash the fruit before using. In the making of citrus drinks the fruit is doubtless used sometimes without washing and the peel put in the drink. In this case there is considerable dilution with liquid. Our tests show that an orange of medium size, on an average, will remove 1 cc. of 5 per cent borax solution when dipped. Perhaps half of this drains off. On this basis a single orange might carry 0.025 gram (0.4 grain) dried borax on its surface. The therapeutic dose is given as 0.750 gram (12 grains), and is the equivalent of what might be carried on about 30 oranges.

Chemical analyses are being made by the Office of Soil Fertility Investigations of this bureau to determine the amount of borax present on and in the peel and in the edible pulp portion of oranges and lemons that had been held 15 days after treatment with borax solution of 5 per cent and of 10 per cent strength. Preliminary results indicate that the amounts present are even much smaller than those indicated and that the borax does not penetrate to the edible portion of the fruit.

No injury to the fruit through the use of borax solution has been observed. Most of the tests were made with fruit obtained on the market some time after picking, but a number of tests on grapefruit and on oranges were made with freshly picked fruit. The effect on very turgid fruit has not been fully tested.

Summary

Preliminary tests have shown that commercial borax (sodium borate) solution in strength of 5 per cent or 10 per cent applied to the surface

Continued on page 34

Scab and Melanose vs. Net Profits

Every fruit grower, we believe buys fertilizer and cultivates his acreage on a pretty well defined schedule worked out in advance. His purpose is to turn the fruit crop into dollars and cents at a reasonable profit over expenses.

Inteligent spraying for prevention of disease and control of insects is equally as important as fertilization or cultivation. On all sides where a gathering of citrus growers occurs the talk runs to better fruit rather than quantity production.

Scab and Melanose are widespread diseases of current interest. Their prevention may be readily assured.

CITRUS SCAB. Spray with Schnarrs Bordol Mulsion where the infection is bad at the rate of one to forty before the bloom. Follow this up a second application ten days after the petals have fallen at the strength of one to fifty. At times it is advisable to make an application of Lime Sulphur Solution in between the two Bordol sprayings when approximately two-thirds of the petals are off. In ordinary Scab cases one application of Bordol Mulsion after the bloom at the rate of one to fifty has been effective.

MELANOSE. Use Schnarrs Bordol Mulsion ten days to two weeks after the bloom has fallen at one to fifty. The period of time in which effective spraying may be done for Melanose is confined to some two weeks. It is of utmost importance that you have material on hand ready for use and not wait until the last minute, as is so often the case, to place your order and then be held up account crowded railroad transportation which delays deliveries.

Schnarrs Bordol Mulsion will kill by contact Aphis and Rust Mite as well as Scale and White Fly.

WATCH CLOSELY FOR APPEARANCE OF APHIDS. Where Aphids are general and have caused the leaves to curl we recommend Schnarrs 3 per cent Nicotine Contact Dust.

We urgently suggest immediate orders for such materials as you will need as keeping qualities are fully guaranteed and delay in placing the order may mean an application too late to be effective, thereby turning a potential profit into a net loss. Our Officers and Personnel at your service.

J. Schnarr & Company

Manufacturers of Spray and Dust Materials — **Orlando, Florida** — **A Complete Line of Spraying and Dusting Equipment**

Florida-Midwest Highway Open

More than four thousand black and white pole markers of the Florida-Midwest route, which extends from Omaha, Nebraska, through Cairo, Memphis, Mobile and Pensacola into Florida, have been painted within Florida during the month of February in addition to the erection of a dozen big road signs south of Jacksonville and Lake City, according to J. E. Crump, Secretary of the association, who is now in Florida.

The linking up of the year, into a continuous road from the Central West to Florida, has caused automobile travel to Florida from this section later than has ever been known before, and despite the fact that most roads are now in their worst condition, an unbroken stream of tourists are still heading south over this route. Heads of routing bureaus attribute this travel to the fact that on this route there are less than fifty miles of unsurfaced roads, and the unsurfaced stretches are passable at all times, and that four days average travel from St. Louis puts a car in Florida. The route from St. Louis or Chicago south has only one mile of unsurfaced road almost to Mobile.

The Florida-Midwest, unknown 90 days ago, has become one of the main traveled arteries to and from Florida.

CITRUS APHIS SPREADING; PROMPT ACTION NECESSARY

Winged females are now appearing rapidly in the colonies of the citrus aphis. The flight of these winged individuals to all parts of the groves is causing rapid spread of the pest. However, in most sections of the state the infestation is not yet so general as to make a general spraying or dusting of the grove necessary. But unless measures are promptly taken this will soon be necessary.

Where the aphids are found on only a few twigs on young trees the preferred way to deal with the pests is to dip them in a bucket of insecticide. For this purpose take a teaspoonful of nicotine sulphate, or a tablespoonful of common laundry soap and a gallon of water. Dissolve, place in a bucket, and go thru the grove and dip every infested twig which can be bent over into the bucket. All others should be cut off and dropped into the bucket or washed with a sponge. This is giving the most thoro eradication of any procedure.

This method is of course slow, and where the aphids are too abundant or the acreage is too large, the trees or portions of the trees where the aphids are found should be spot dusted with a nicotine sulphate-lime dust or calclum cyanide. Where the infestation has become general, probably it is cheapest to spray with a solution of a half pint of nicotine sulphate and 2 or 3 pounds of soap to 50 gallons of water.

In writing to advertisers, please mention The Citrus Industry.

NEWELL NAMED DIRECTOR ON FOREST RESEARCH COMMITTEE

Wilmon Newell, director of the Florida Agricultural Experiment Stations, has been appointed by the Secretary of Agriculture to be a member of the Southern Forest Research Advisory Committee. The appointment was made by Secretary Howard M. Gore before he retired, and has just been announced.

The purpose of the Advisory Committee is to coordinate the efforts of all agencies in the Southern states doing forest research work, and to stimulate work of this kind. The committee will also endeavor to secure, as far as possible, general adoption of improved forestry and conservation methods developed by the various state and federal agencies engaged in forest research work in the Southern states.

CITRUS CULTURE IN EGYPT.

Continued from page 9

ses the value of the whole consignment according to the value of the lowest grade fruits in the consignment, whereas if they had been graded the seller may expect to get good prices at least for fruits of first class size and appearance. No effort should be spared to render their appearance attractive by brushing off all dirt and dust adhering to the skin. In other countries, this work is done by means of machines. Such a machine should find a place in the equipment of citrus plantations in this country also."

The above is a review of "The Propagation and Cultivation of Citrus Trees in Egypt" by Thos. W. Brown, F. L. S.

GROWERS
and
PACKERS
SUPPLIES

CAR STRIPS
Cypress or Pine in
Car Lots or less

Pearson's
CEMENT COATED NAILS
All Sizes

BOX STRAP
In coils and cut to length

LADDERS
Factory made Spruce
12 to 30 feet

CLIPPERS
NAIL STRIPPERS
DRY PASTE

Fruit Wraps and
Orange Boxes

FERTILIZERS
BLUESTONE
Fertilizer Materials
Insecticides

CHASE & CO.
Sanford - Florida
Ask for our new catalog

DUSTING SULPHUR

FOR CONTROL OF

Rust Mite, Red Spider, Powdery Mildew, Cotton Flea and Other Pests

"ANCHOR" BRAND SUBLIMED VELVET FLOWERS OF SULPHUR

SUPERIOR QUALITY EFFICIENT AND ECONOMICAL

1. 100 Per Cent Pure.
2. Light and Fluffy.
3. Extreme Fineness; Greater Covering and Spreading Properties.
4. Strongest and Most Lasting Fuming Qualities.
5. Remains Longest on the Trees and Plants.
6. Does not Contain Adulterants such as Lime and Kaolin.

Send for Booklets "The Manufacture and Relative Values of Dusting Sulphurs", "The Truth about Sublimed Sulphur"; also U. S. Gov't Bulletins "Dusting to Control Rust Mite", Dusting and Spraying Charts, and "Control of Cotton Flea".

STAUFFER CHEMICAL COMPANY OF TEXAS

Houston, Texas

Manufacturers and Refiners of All Grades of Dusting, Spraying and Agricultural Sulphurs

Distributors for Florida

Chase & Co., Sanford
Hector Supply Co., Miami
Florida Insecticide Co., Apopka
E. O. Painter Fertilizer Co., Jacksonville

STAUFFER QUALITY CHEMICALS

"ANCHOR TO STAUFFER"

"No nursery tree is a first-class tree unless budded from a bearing tree of a known quality and quantity of production."

Running True to Form

The most important factor in a race horse is whether or not it will "run true to form". A big league baseball club during the crisis of a world's championship contest would surely lose if it did not play "true to form." Football games are won by the teams that play the game "true to form." Motor car races are won or lost according to "true to form" motor performance. Speed boats racing across the water must have their motor tuned to "run true to form" in order to develop maximum horsepower. In all sports, in business, in everything——running "true to form" wins every time.

Ocklawaha Nurseries Pedigreed Trees will "run true to form" in every variety. The fruit they produce will be the highest quality obtainable, the production maximum, and they will continue to do this year after year. Why will they do these things? Because they are **PEDIGREED TREES**, and Pedigreed Trees "run true to form."

Ocklawaha Nurseries, Inc.

Pedigreed Citrus Trees

Lake Jem, Florida

Phone Victoria Thru Orlando

Telegraph Zellwood

Write today for our price list and Book of Truth for Planters of New Groves. FREE.

REASONER ENDORSES CROTALARIA

Mr. E. N. Reasoner, of the Royal Palm Nurseries, Oneco, Florida, one of the leading horticultural authorities of the state, gives his full endorsement to crotalaria as a citrus cover crop. Mr. Reasoner writes The Citrus Industry as follows:

"Noting article on page 26 of the February number on "Crotalaria A New Cover Crop" I wish to say that valuable plant was introduced by us in the late '80s or early '90s together with several other species of Crotalaria From South Africa and at least two species have run wild all over South Florida in various places for a number of years. We have found the taller kind, now being widely planted, to be a splendid cover crop in groves of Citrus and can indorse the article mentioned, as well as cite anyone to the address on same subject at the Horticultural Society's meeting last spring in Tampa, where samples of the plant and seeds were shown the members."

PRELIMINARY RESULTS WITH THE BORAX TREATMENT OF CITRUS FRUITS FOR THE PREVENTION OF BLUE MOLD ROT

Continued from page 31

of oranges or lemons and allowed to dry greatly reduces blue-mold rot under experimental conditions that are unusually favorable for rot development.

Oranges and grapefruit handled in a commercial way, when treated with the borax solution, showed a marked reduction of both Phomopsis and Diplodia types of stem-end rot, as well as of blue-mold rot.

The borax treatment gives promise of being commercially valuable, in conjunction with careful handling of the fruit, in reducing losses from blue-mold rot.

HUMUS THE LIFE OF SOIL

Humus—decayed vegetable matter—is the life of the soil. A soil with little or no humus has but a small amount of bacterial life in it, and bacterial life in the soil is necessary before it can be called fertile. A fertile soil is the only kind that produces most profitable crops. Nearly all soils in Florida would be improved by the addition of humus.

Humus can be added to the soil by plowing into it vegetable matter that will decay in a reasonably short time. Instead of burning off grass and weeds in getting ready for the spring crops, plow them under. In this way valuable plant food material will be converted into humus instead of smoke. When a crop of grass and weeds is burned, the greater part of the fertilizing elements go up in the smoke.

The man who carefully returns to his farm all of the organic matter available, such as stable manure, bean vines, peavines, grass and weeds that accumulate upon the land each year reduces the fertility of his soil. Reduced fertility means lower crop yields and increased costs of production.

CLASSIFIED ADVERTISEMENTS

The rate for advertisements of this nature is only five cents per word for each insertion. You may count the number of words you have, multiply it by five, and you will have the cost of the advertisement for one insertion. Multiply this by the total number of insertions desired and you will have the total cost. This rate is so low that we cannot charge classified accounts, and would, therefore, appreciate a remittance with order. No advertisement accepted for less than 50 cents.

REAL ESTATE

WANTED—To hear from owner of farm for sale, for fall delivery. O. K. Hawley, Baldwin, Wis.

FOR SALE CHEAP—Eleven acres high, rooly citrus land; 4 acres cleared with small house, and large nice bearing orange trees full of fruit. Nicely located near Altamonte Springs, Fla. For particulars write H. A. Lunquire, 41 N. W. 29th St., Miami, Fla.

WILL EXCHANGE West Texas cattle ranch for unimproved or improved land in Florida. What have you? Give price and full particulars. T. E. Bartlett, 3410 McKinley Ave., ElPaso, Texas.

EARLY BEARING Papershell Pecan trees, budded or grafted and guaranteed. Great shortage this year. Write for catalog today. Bass Pecan Company, Lumberton, Miss.

Want to hear from owner having farm for sale; give particulars and lowest price. John J. Black Chippewa Falls.

NURSERY STOCK

FOR SALE—Cleopatra Mandarine seedlings. September delivery, enter order now. Cavendish banana plants and avocado trees. Write for price list. R. E. Skinner, Hillsboro Hotel, Tampa, Florida. May-4t.

BANANA PLANTS for sale. Improved Cavendish, Hart, Orinoco, Ladyfinger. Information free. W. E. Bolles, Oldsmar, Fla. tf

"BOOK OF TRUTH"
For planters of new groves
Is yours for the asking,
Write Today.
OCKLAWAHA NURSERIES INC.
"Pedigreed Citrus Trees"
Lake Jem, Florida

POLK LAKE NURSERIES
Offer to the grower young trees of standard variety, backed by 30 years of nursery experience and a guarantee which only honest dealing can justify. For full information address A. H. Sloan, Box 413, Bartow, Fla.

AGENTS WANTED—We want good, reliable parties to act as our agents in their local communities, selling our citrus trees on a liberal commission. A good opening for the person who will devote all or a part of their time working among their neighbors. Lake

MISCELLANEOUS

LAND INSPECTION Soil Surveys—Consultations. Advisory services. Appraisals. All agricultural branches. Specialties: Town planning, Landscaping, Citriculture, Tropical fruits, Viticulture, Trucking, Livestock. Lindley Heimburger, B. S. Agri., M. S. Agricultural Engineer, Chemist, Box 226, Tampa.

FOR SALE—Dairy and stable manure, car lots. Link & Bagley, Box 464, Tampa Florida. 6t

WHITE WYANDOTT Cockrels, regal strain—the best in the country, direct from Martin pens. Utility and show birds $5.00 each; also eggs for hatching $5.00 per 15. W. A. King, Gen. Del., St. Petersburg, Florida.

SOUTHDOWN SHEEP, White Rocks, Toulouse Geese, Guineas, Angora and Milk Goats, Circular free. Woodburn, Clifton, Va.

AGENTS—Quality Shoes, quick sellers. Big commissions, immediate returns! Repeat orders. Experience unnecessary. Write full particulars. Tanners Shoe, 2011 C St. Boston.

FOR SALE

Remington Portable Typewriter with standard keyboard. Has all advantages of larger machine. Ideal for farm and home use. $60. cash or sold on easy terms. Remington Typewriter Co., 103 Parker St., Tampa Florida.

CONDENSED DATA—on Tung Oil Industry has been compiled by B. F. Williamson and E. L. Lord. By application to B. F. Williamson, Gainesville, Florida, this booklet will be sent Nursery Co., Leesburg, Fla.

FARM—GROVE—HOME

22 acres large bearing grove; modern two-story, 8 room house, completely furnished on third largest lake in state in thriving town; good roads, church, school; complete line farm implements and tools. P. F. Cloonan, Yalaha, Lake County, Florida.

GROVE HEATERS—Several hundred oil grove heaters at less than one-third original cost and practically new, only used once. Heaters, drums and oil all in good condition. Apply to Lewis E. Klatte, The Gem Nurseries, Lake Jem Florida.

POSITION WANTED—Competent citrus grove superintendent wants supervision of groves where quality fruit is essential aim. 12 years technical and practical experience. Care Citrus Industry.

HIGH BLOOD PRESSURE easily, inexpensively overcome, without drugs. Send address. Dr. J. B. Stokes, Mohawk, Florida.

CONTINENTAL VITALITY CHICKS now hatching. Eleven tested varieties to select from. Your copy of our circular giving full particulars is waiting. May we send it? Address, 332, The Continental Hatchery of Valdosta, Ga.

YOU FLORIDA LAND POOR REAL ESTATE OWNERS—Trade your Florida land for a time tried and road tested car. From Ford to Lincoln; Oldsmobile to Cadillac; Cleveland to Chandler, or Essex, Hudson; Buick or Dodge; all makes of cars. Open or closed cars. Title of land must be acceptable to such legal authorities as Gibbons and Gibbons of Tampa. Lands must have good location, almost any soil, series and type, if other conditions are fulfilled and checked by soil expert such as Lindley Heimburger, Tampa, said to be the leading authority in Florida. P. O. Box H-226, Tampa